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ANNUAL REPORT

OF THE

DEPARTMENT OF AGRICULTURE

OF THE

PROVINCE OF ALBERTA

FOR THE YEAR

1965

PUBLISHED BY ORDER OF THE LEGISLATIVE ASSEMBLY

EDMONTON, ALBERTA
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1966

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To HIS HONOUR,

J. W. GRANT MacEWAN,

Lieutenant Governor of the Province of Alberta.

Sir:

I have the honour to submit herewith the Report of the Department of Agriculture for the year 1965.

I have the honour to be, Sir,

Your obedient servant,

HARRY E. STROM,

Minister of Agriculture.

DEPARTMENT OF AGRICULTURE

1965

HON. HARRY E. STROM, Minister of Agriculture
E. E. BALLANTYNE, Deputy Minister of Agriculture

HEADS OF BRANCHES

A. M. Wilson, B.A., B.Sc., M.Sc., P.Ag., Field Crops Commissioner
W. H. T. Mead, B.Sc., P.Ag., Livestock Commissioner
D. H. McCallum, B.S.A., P.Ag., Dairy Commissioner
R. H. McMillan, B.S.A., Poultry Commissioner
R. W. Gillies, Supervisor, Fur Farms Branch
F. L. Grindley, B.A., B.Sc., P.Eng., Director of Water Resources
C. J. McAndrews, B.Sc., M.Ag., P.Ag., Colonization Manager
S. S. Graham, B.Sc., P.Ag., Director, Agricultural Extension Branch
J. G. O'Donoghue, V.S., D.V.M., Director, Veterinary Services Branch
J. E. Hawker, B.Sc., B.A., P.Ag., Director, Agricultural and Vocational Colleges Branch
G. R. Sterling, B.Sc., Provincial ARDA Director
K. G. Taylor, B.Sc., P.Ag., Chairman, Alberta Farm Purchase Board
G. R. Purnell, B.Sc., M.Sc., Ph.D., P.Ag., Director, Farm Economics Branch

Report of the Deputy Minister

E. E. BALLANTYNE, V.S., D.V.M., P.Ag., F.R.S.H.

The HONOURABLE HARRY E. STROM,
Minister of Agriculture.

Sir:

I have the honour to submit the annual report of the Alberta Department of Agriculture for the year ending December 31, 1965.

Nineteen hundred and sixty-five was a generally successful year for agriculture in the province. The prospects of an outstanding record crop production were dashed by a prolonged rainy spell in late summer, but improved conditions in early fall permitted completion of the harvest. In spite of this interference with normal harvesting conditions, crop yields were well above average in most of the province, although grades dropped due to the rainy conditions. A few areas, notably parts of the Peace River Block and part of west-central Alberta, were severely affected by adverse weather, resulting in poor crops.

Again the province maintained a prominent position in the national livestock picture. On June 1, Alberta had 24% of the cattle, 24% of the hogs and 30% of the sheep in Canada, which resulted in the province supplying approximately 30% of the red meat for the nation. Alberta continued to maintain its position of being third in dairying and poultry production in Canada. Estimated value of agricultural production in 1965 increased to approximately $980,600,000.00 compared to $860,700,000.00 in 1964.

The Department suffered the loss of the services of Mr. R. M. Putnam, who retired on sick leave on February 1st after very capably being the Deputy Minister since July 1, 1955. Those years were notable ones for agriculture in the remarkable changes in technological advances and their application. Mr. Putnam's sound counsel and direction contributed a great deal to the progressive development of the services of the Department in aiding the advancement of the agricultural industry in Alberta and beyond the boundaries of this province. He had a wide and varied experience with the Department, commencing in 1933 as a fieldman, Director of Extension in 1938, Superintendent of the Schools of Agriculture and Home Economics in 1949, in addition to the extra duties of Assistant Deputy Minister from 1947.

Full details of Department activities and services will be found in the various Branch reports which follow. It is worthy of note that the Department's duties in 1965 were not just confined to agricultural production, but also included responsibilities in the fields of processing, marketing, water management, and many others. This change over the years and the complexity of the agricultural industry has resulted in changes in Department staffing. Personnel included those in the disciplines of extension, teaching, livestock and poultry nutrition, genetics, veterinary medicine, sociology, economics, statistics, engineering, home economics, home designing, plant pathology, entomology, dairy science, chemistry, soil and crop science, and several others. These supplied the technical and scientific background for the successful operation of modern agriculture.

During the year action was taken on the development of several essential and important policies for the Department. To improve co-ordination and eliminate duplication of services between the Federal Department of Agriculture, the Faculty of Agriculture, University of Alberta, and this Department, the Alberta Agricultural Co-ordinating Committee was formed. To expand needed agricultural research at the University of Alberta, this Department received approval to establish the Agricultural Research Trust to provide and ensure financial stability for this purpose. Approval was granted for an expansion program of considerable magnitude at the three Agricultural and Vocational Colleges. The Alberta water policy called "PRIME" was approved to ensure that the province would develop and conserve this vital resource for future generations. An expansion of laboratory facilities was undertaken to provide this necessary scientific core for Department services and to supply data for formulating and evaluating agricultural policy, as well as delineating areas needing further research.

In keeping with the changes of the agricultural industry, which is both a science and a business, action was commenced to re-organize the Department in a more businesslike manner to provide the services demanded of it.

The Marketing Council was established under The Agricultural Products Marketing Act which had been amended to provide for the setting up of marketing boards or marketing commissions.

At the end of December, 1965 the number of permanent staff totalled:

	1964	1965
Technical and professional staff	249	262
Other staff	385	426
TOTAL STAFF	634	688

I wish to express my appreciation to you for your guidance and counsel and to the staff members of the Department for their high calibre of service in conducting the many programs of the Department.

Finally, on behalf of all the members of our staff, I wish to acknowledge and express sincere appreciation to everyone who assisted the Department with the work undertaken on behalf of the progress of agriculture in Alberta.

Respectfully submitted,

E. E. BALLANTYNE,
Deputy Minister.

Report of the Field Crops Branch

A. M. WILSON, B.A., B.Sc., M.Sc., P.Ag., Commissioner
O. G. BRATVOLD, B.Sc., P.Ag., Crop Improvement
L. G. JORGENSON, B.Sc., P.Ag., Special Crops
W. LOBAY, B.Sc., M.Sc., P.Ag., Weed Control
A. W. GOETTEL, B.Sc., M.Sc., P.Ag., Soils
J. B. GURBA, B.Sc., P.Ag., Crop Protection and Pest Control
L. K. PETERSON, B.Sc., M.Sc., Ass't. Crop Protection and Pest Control
P. D. McCALLA, B.Sc., P.Ag., Horticulture
P. D. HARGRAVE, B.Sc., M.Sc., P.Ag., Supt. Horticultural Station, Brooks
T. KILDUFF, B.Sc., M.Sc., P.Ag., Ass't. Supt., Horticultural Station, Brooks
S. MOLNAR, B.Sc., P.Ag., Horticultural Station, Brooks
J. W. EDMUNDS, B.Sc., P.Ag., Apiculture
F. S. GODDARD, B.Sc., P.Ag., Special Projects
D. STELFOX, B.Sc., P.Ag., Crop Clinic

REPORT OF THE FIELD CROPS COMMISSIONER

A. M. WILSON

The crop out-turn at 26.1 bushels per acre for wheat was only exceeded on three previous occasions, namely 1923 with a 28 bushel average, 1952 with 26.9 and in 1927 with 26.4. Coarse grains and flax were equally good.

There was a noticeable acreage shift to rape due to satisfactory returns in 1964, and because wet soil delayed seeding operations.

The Peace River area did not share with the rest of Alberta in the abundant crop. These northern areas were again severely affected by adverse weather. Specifically from Nampa north to High Level and Fort Vermilion very dry conditions prevailed. The previous crop was equally distastrous because of excessive moisture. The western Peace area adjacent to the B.C. boundary, namely the western section of the County of Grande Prairie through to Cherry Point and Bear Canyon, was continuously wet due in part to the excessive moisture from the previous year. Crops in intermediate areas were locally good or poor depending largely on rain patterns.

Many farmers in the Peace planted rape because of the late spring and wet soil. It is estimated that 400,000 acres were sown. Soggy wet soil at planting time, followed by hot dry weather during the flowering period, was very injurious to the crop. As a consequence a considerable acreage was worked down in mid-August. The yield of harvested crops was reduced further because of heavy winds when the crop was in the swath. These gale force winds also occurred in Central Alberta and here too the loss was extensive in many fields.

Throughout Central and Southern Alberta crop prospects until mid-August were never better. Unfortunately showery and wet weather from mid-August until the end of September delayed crop maturity and prevented a normal harvest. Fortunately October weather was exceptionally good; the harvest was completed and considerable field work was finished. Although wind, rain and frost lowered both quality and yield the final bushelage and export market prospect compensated for the lower grades.

The following table gives the area, yield and production of the principle field crops for the years 1964 and 1965:

	Area		Yield per Acre		Production	
	1964	1965	1964	1965	1964	1965
	—'000 ac.—		—bu.—		—'000 bu.—	
Wheat	6,495	6,050	22.3	26.1	145,000	158,000
Oats	1,950	2,200	40.5	47.3	79,000	104,000
Barley	3,320	3,390	32.2	33.9	107,000	115,000
Fall rye	157	177	20.1	23.4	3,150	4,150
Spring rye	24.9	23	14.1	19.6	350	450
All rye	181.9	200	19.2	23.0	3,500	4,600
Flaxseed	370	414	11.6	13.8	4,300	5,700
Mixed grains	328	335	33.5	38.8	11,000	13,000
Peas, dry	8.2	8	24.1	26.9	198	215
Rapeseed	404	735	16.0	12.9	6,460	9,500
			—cwt.—		—'000 cwt.—	
Potatoes	21.1	23	115.1	130.4	2,429	3,000
			—lb.—		—'000 lb.—	
Mustard Seed	35	96	657	774	23,000	74,350
Sunflower Seed	7.5	1.5	300	170	2,250	255
			—tons—		—'000 tons—	
Tame hay	2,628	2,830	1.37	1.94	3,600	5,500
Sugar beets	42.1	39.1	12.51	13.04	527	510

The Crop Insurance Corporation, established in 1964, offered All Risk Crop Insurance in three areas, namely Vermilion-Ranfurly, Ponoka-Lacombe, and Nobleford-Vulcan. The average sign-up was 44%. Wheat, oats and barley were named as insurable crops.

Fortunately crop yields in all areas were well above the long-time average yet in spite of high average yields more than 100 claims were made on policies. Most of these were due to wet weather in the western part of the Lacombe-Ponoka district.

The Corporation, at its December meeting, agreed to expand the program to include, all the Municipal Districts of Peace, Fairview, Spirit River and approximately 25 townships in the Grande Prairie County. Insurance will also be offered for the first time in portions of the Municipalities of Kneehill, Mountain View, Rocky View and Wheatland. The three initial areas will also be extended. In total Crop Insurance will be available to about three times as many farmers in 1966 as in 1965.

The risk covered by the Hail Insurance Board was the largest on record, just over 35,000,000. Fortunately for those who were insured and for the Board losses were moderate and a substantial dividend will be payable to those farmers who did not claim on their policy.

As a consequence of three crop failures in succession many farmers in the upper Peace and in the extreme west-central part of the Province have requested financial assistance from the Government in order that they may continue their farm operations. The Department recognized the plight of the farmers in these areas and a plan of assistance was submitted to the Canada Department of Agriculture with a request for Federal participation on a cost-sharing basis. The Policy, at the close of the year, was not finalized.

CROP IMPROVEMENT

The Crop Improvement Program consisted of three projects. Project D, Field Demonstrations and Project G, Variety Demonstrations were continued. The former Range Improvement Policy was discontinued and replaced by the A.R.D.A. Soil and Crop Management Project.

Project D—Field Demonstrations, Crops and Fertilizers

Under this Project seed was supplied directly to District Agriculturists without cost for their use in demonstrating the value of improved varieties and fertilizer application. A total of 385 lb. of seed of many varieties was supplied.

Project G—New Variety or Species Demonstration Project

This Project was used to introduce new varieties or species of forage crops and to demonstrate their value. A total of 950 lb. of seed was distributed. The kind of seed distributed was Chinook Orchard Grass and Pubescent Wheatgrass.

A.R.D.A.—Soil and Crop Management Project

Thirty local administrations, including Counties, Municipal Districts, Improvement Districts and Special Areas, allocated $39,797.00 of local funds toward the program. Under the terms of the Project local administrations contributed 1/6 of the cost of the seed, with farmers paying 50% and the Provincial and Federal Governments equally sharing the balance.

Following is a summary of Federal and Provincial contributions paid out to Counties and Municipal Districts:

County of Athabasca	$3,096.21
County of Barrhead	2,950.51
County of Smoky Lake	1,902.73
County of Ponoka	3,920.04
County of Wheatland	1,474.91
County of Thorhild	8,245.91
County of Paintearth	1,524.42
County of Leduc	4,411.23
County of Forty Mile	252.01
County of St. Paul	2,286.79
County of Lamont	2,785.84
County of Wetaskiwin	1,668.88
County of Lacombe	2,044.30
County of Warner	975.34
County of Vulcan	8.33
Municipal District of Starland	46.66
Municipal District of Bonnyville	4,853.73
Municipal District of Lac Ste Anne	2,000.00
Municipal District of Stony Plain	539.64
Improvement District No. 107	721.43
Improvement District No. 108	977.57
Improvement District No. 85	25.40
Improvement District No. 101	975.77
Improvement Districts Nos. 11 and 22	1,083.39
Improvement District No. 77	95.91
Special Areas 1, 2 and 3	3,501.08
	$52,368.03

Fifty percent of the above amount was recovered from the Federal Government in accordance with the terms of the A.R.D.A. agreement.

Forage Seed Production

Forage seed production increased in 1965. Creeping Red Fescue production was particularly high, reaching a total in excess of 20 million pounds. Nevertheless, markets held firm and prices to producers averaged from 28 to 30c per lb. for No. 1 seed.

Brome crops were light. Production of Crested Wheatgrass, timothy and perennial rye grass increased whereas volume of Russian wild-rye declined.

Yield and quality of legume crops were generally good. Alsike production was approximately 15 million pounds and some difficulty in marketing this volume was experienced. Export demand for red clover was also weak resulting in lower prices. Alfalfa production increased due mainly to increased use of the leaf-cutter bee.

The following table gives forage seed production of most kinds in the years 1961 to 1965 inclusive with preliminary estimates for 1965.

	1961	1962	1963	1964	1965
		—thousand pounds—			
Alfalfa	2,723	2,000	2,410	1,211	750
Sweet Clover	7,205	4,430	5,875	2,459	2,500
Red Clover	4,113	2,800	5,840	2,930	5,500
Alsike	11,275	7,700	9,730	5,671	15,000
Timothy	591	400	730	1,009	1,600
Crested Wheat	606	480	425	581	750
Brome	3,939	4,000	4,760	5,807	4,400
Creeping Red Fescue	17,046	9,000	5,450	8,923	18,000
Russian Wild Rye	......	......	350	1,000	450

PRODUCTION OF PEDIGREE SEED

Cereals and Flax

The following table summarizes the estimated yields in bushels of cereals and flax inspected for registration and certification.

	1961	1962	1963	1964	1965
		—thousand bushels—			
Wheat	1,301	929	1,315	2,345	1,519
Oats	1,209	1,490	828	848	608
Barley	481	526	499	514	822
Flax	101	64	62	95	114

Forage Seed

The table below is a summary of reported acreage of grass and legume crops inspected for registration or certification:

	1961	1962	1963	1964	1965
Streambank Wheatgrass (Sodar)	......	......	18	18	18
Brome (Carlton)	......	18	17	108	135
(Fischer)	......	355	160	155	90
(Saratoga)	......	32	162	217	303
(Red Patch)	......	......	......	......	16

Creeping Red Fescue (Olds)	881	1,471	713	243	1,008
(Pennlawn)	......	......	......	......	287
Crested Wheatgrass (Summit)	732	463½	130	72	55
(Nordan)	1,238	1,317	762	823	819
(Fairway)	50	170	90	50	50
Intermediate Wheatgrass (Chief)	......	......	......	......	40
Meadow Fescue (Ensign)	......	......	......	......	11
Birdsfoot Trefoil (Empire)	......	......	......	......	20
Timothy (Climax)	1,769	2,218	2,536	3,936	6,194
(Astra)	......	......	......	......	90
Alfalfa (Vernal)	251	225	264	186	96
(Rambler)	818	907½	765	632	489
(Beaver)	......	......	......	307	514
(Ladak)	......	46	51	96	99
Red Clover (Altaswede)	15	......	40	100	2
(LaSalle)	597	364	529	243	212
Kentucky Bluegrass (Merion)	164	157	40	72	45
(Park)	......	......	......	......	20
Orchard Grass (Chinook)	205	317	205	127	175
(Tardus II)	......	......	10	10	34
Reed Canary Grass (Frontier)	......	......	......	......	4
White Clover (Ladino)	......	......	......	......	40
Rye Grass Perennial (Norlea)	......	......	18	13	248
Russian Wild Rye (Sawki)	......	......	......	......	11

Distribution of Forage Seed

As in previous years the Field Crops Branch co-operated with the Canadian Forage Seeds Project in the distribution and multiplication of Breeder and Foundation forage seed. The following quantities were distributed:

Breeder:

Redpatch brome	25 lbs.
Aurora alsike	180 lbs.
Altaswede red clover	26 lbs.
Leo Birdsfoot trefoil	18 lbs.

Foundation:

Vernal alfalfa	400 lbs.
Sawki Russian wild-rye	200 lbs.
Norlea perennial rye-grass	450 lbs.
Redpatch brome-grass	500 lbs.
Rambler alfalfa	250 lbs.
Beaver alfalfa	350 lbs.
Carlton brome-grass	150 lbs.
Nordan crested wheatgrass	700 lbs.
Pennlawn red fescue	......
Frontier reed canary grass	25 lbs.
Climax timothy	1,800 lbs.
Chief Intermediate Wheatgrass	100 lbs.

Alberta Cereal Advisory Committee

This Committee met during December and reviewed research data relative to cereal crops. It recommended the addition of descriptive data of four new varieties in the bulletin "Varieties of Grain for Alberta". These are: Manitou wheat, Harmon oats, Conquest barley and Noralta flax.

Forage Crops Advisory Committee

This Committee held its Annual Meeting in December, at which research, plant breeding, extension and promotion of forage crops was discussed. It supported the licensing of a new Creeping Red Fescue variety to be named Boreal.

The Seed Dealers Act

Twenty-six seed dealers were licensed under the Act.

Agricultural Relief Advances Act

Assistance, by authority of the Agricultural Relief Advances Act in the purchase of seed, fuel and oil, was provided to 206 farmers throughout the Peace River and Bonnyville areas. Total expenditure amounted to $74,688.18.

Successive crop failures in parts of the Peace and west-central Alberta resulted in requests for financial assistance from farmers in these areas.

Other Activities

Enquiries re all phases of crop production were dealt with. Lectures were prepared and presented at Short Courses as well as TV and radio interviews.

Assistance was provided in the preparation and revision of bulletins.

The Grassland Improvement Program was continued in the Edmonton area. This program promotes better grassland management.

The Royal Agricultural Winter Fair

The Department continued its policy of assisting exhibitors at the Royal Agricultural Winter Fair, Toronto. The Field Crops Branch assembled and shipped exhibits to the Show paying the shipping costs both ways. In addition to supervising the exhibits at the Show all prize monies won by Albertans at the Royal were increased by 50%. A special honorarium of $25.00 was paid for each first prize in the classes for wheat, oats, barley, rye, flax, alfalfa, alsike, red clover, sweet clover, brome, fescue, timothy, crested wheatgrass, field beans, russet (netted gem) seed potatoes, potatoes in the Vegetable and Cooking classes and 4-H Club exhibits. Such honoraria was increased to $100.00 for championships won with exhibits of wheat, oats, barley, rye, flax and forage seeds.

The names of the 1965 winners at the Toronto Royal Winter Fair were as follows:

World Championships

Wheat (Chinook)	Larry C. Hixt	Beiseker
Flax (Raja)	Harold E. Hansen	Vulcan
Forage Seed (Climax)	W. C. Schaefer	Innisfail
Potatoes (Netted Gem Seed)	Tona Ohama	Rainier

Championships

Vegetable Class:-

Potatoes (Netted Gem)	Tona Ohama	Rainier

Reserve Championships

Oats (Victory)	Bruce Purves	Valhalla
Wheat (Chinook)	George Luco	Lethbridge
Winter Wheat (Winalta)	Stanley Lewis	Claresholm
Flax (Raja)	Mr. and Mrs. John Cotton	Kenville

First Prizes

Durum Wheat (Stewart 63)	Mrs. Chris Deurloo	Granum
Brome	Jacob Oster	Veteran
Fescue	John Fredland	La Glace
Sheaf Wheat	Carl Brown	Rolling Hills
First-cut Hay (Legume-grass mix.)	W. C. Schaefer	Innisfail
First-cut Hay (grass)	Andrew Giffen	Okotoks
Pedigree Spring Wheat	George Luco	Lethbridge
Pedigree Alfalfa Seed	Willard Penner	Grassy Lake
Potatoes (Cooking)	J. Shimbashi	Barnwell

SPECIAL CROPS

Acreage of Special Crops in Alberta:

	1964	1965
Potatoes	13,500	14,500
Onions	290	300
Corn (fresh only)	680	740
Cabbage	240	260
Carrots (fresh only)	150	240
Cucumbers	190	170
Turnips	450	550
Dry Beans	1,400	1,450
Sunflowers	7,500	6,000

Potatoes:

The marketable yield in the Edmonton area was 100 cwt. and in the Irrigated area 150 cwt. per acre.

The total production is up compared to 1964-1965 production was 85,000 tons. Potato prices have remained at a reasonable level, even after the exceptionally high prices for the 1964 crop. Potato prices in December were $2.25/cwt. to the grower compared to $4.85/cwt. in December, 1964.

The Alberta Potato Growers' Association have requested a Marketing Commission be established for potatoes. It is anticipated the Commission will deduct .05c/cwt. for potatoes marketed. This money will be placed in a fund to be used for advertising, promotion and support of research work on potatoes.

A potato packaging warehouse was built in Vauxhall. The Company, Pak-Wel Produce Limited, plans to package approximately 40,000 tons of potatoes from the 1965 crops. As a result of this enterprise, two other areas, Edmonton and Taber, are contemplating similar plants.

Alberta won all major potato prizes at the Royal Winter Fair. Tona Ohama of Rainier, Alberta, won the two championship trophies, one for seed potatoes, the other for table stock. This is the first time Alberta has won these trophies. To round out the sweep, Ed Shimbashi, Barnwell, won top prize in the cooking class.

Alberta potato growers had a commercial potato display at the Royal. This display was an overwhelming success and plans are being formulated for a larger display in 1966.

Onions

Most of the onions were grown in the Medicine Hat, Bow Island, Barnwell and Brooks areas. A cool spring and wet fall resulted in a crop of relatively small onions. The market is slow with lower prices for the smaller onions.

Corn

Cool weather delayed harvesting of the early crop in Medicine Hat. As a result, growers lost the advantage of an early crop as most of the crop became marketable at the same time. Large quantities of fresh corn from British Columbia and Manitoba offered on the Alberta market accompanied by misunderstanding between Alberta growers and wholesalers resulted in low prices. Two hydro-coolers were built in Medicine Hat but were used very little because of the poor prices.

Carrots

The carrot acreage increased again this year. Proper storage facilities made it possible for some growers to extend marketing into February and March. Response of wholesalers is very good to the Alberta grown product.

Canning Crops

Approximately 11,000 acres were planted to canning crops. These included peas, beans, corn, carrots and a small acreage of pumpkins. Relationships between the Growers' Marketing Board and the Processing Companies improved.

Greenhouse Crops

Alberta's greenhouse industry occupies 2,265,000 square feet of glass or approximately 52 acres. Production value is estimated at approximately $5,000,000.00. This phase of production could expand considerably, particularly in greenhouse vegetable crops.

Other Activities

The Special Crops Supervisor addressed 41 growers' meetings, short courses and field days. A total of 74 farm calls were made during the course of the year and 34 business calls on topics related to special crops. Ten radio talks were given and five appearances were made on television.

He represented the Department at the annual meeting of the Canadian Horticultural Council in Ottawa, and the Royal Winter Fair in Toronto.

The Pilot Plant project, initiated at Brooks in 1962, was continued and expanded. New equipment, including a carrot harvester, pallet boxes, conveyor equipment, and a fork lift, was purchased. Growers, who previously participated in the program, increased their acreage in 1965. These growers became convinced of the potentials of the enterprise. It is anticipated they will form the basis for a central vegetable packing warehouse in Brooks.

Numerous inquiries by telephone and mail indicated an increased awareness of the potential in commercial vegetable production.

WEED CONTROL

General

High winds, cool temperatures, rain and poor weed growth delayed the seeding of many crops until the end of May. In a number of regions where fields were seeded early, some reseeding was done due to the extremely heavy wild oat germination towards the end of May and early June.

Wild oat growth was the heaviest in years. Delayed seeding did not significantly reduce the incidence of wild oats. Many farmers resorted to post emergence spray for this weed. Post- and pre-emergence spraying for wild oat control was the highest on record.

Toward the end of June rains were heavy in most parts of the province seriously interrupting the farmers' work schedule. Weed growth on summerfallow and cropland was heavy. General spraying for weeds in crops started about the middle of June and by the end of the month, was only 35% completed in central and northern regions of the province. In southern Alberta and Peace River area it was 80% completed by the end of June.

Delayed harvesting in the fall due to continuous rain interruptions left many summerfallow fields in a weedy condition. There were, however, an increasing number of farmers who resorted to late fall spraying of both fallow and stubble land, controlling the weeds by this effort.

Weed Surveys

(a) Survey of the Prairie Provinces

Additional information on weed infestations was provided to the Research Station, Regina, Saskatchewan for completion of the weed survey started in 1964. Compilation of the data was completed this year but maps showing infestations were not distributed from the Station due to technical difficulties.

(b) Five Persistent Perennials

Survey reports from Agricultural Service Boards indicate the following infestations as recorded by the Weed Inspection force:

	1964		1965		Some Areas Showing
Weed	Farms	Acres	Farms	Acres	Heavy Infestations
Hoary Cress	689	6,920	392	5,661	Lethbridge, Cardston, Pincher Creek.
Russian Knapweed	182	619	100	680	Lethbridge, Taber, Claresholm.
Field Bindweed	880	5,719	490	5,710	Lethbridge, Warner, Cardston.
Leafy Spurge	264	4,600	234	4,474	Cardston, Provost, Pincher Creek.
Toadflax	6,854	65,301	6,889	77,255	Throughout province.

Although the known infested areas have been held in check, Toadflax made some gains. A significant number of new (but small) patches were located this year. Sodium chlorate and borate-chlorate compounds were used extensively.

Other Weeds of Increasing Importance

Poison (Suckleya suckleyana) has been reported from the Alsask area apparently making its appearance for the first time.

Field Scabious (Scabiosa arvensis) first located on about 300 acres near Calgary, has now been also found in a number of other areas in the central part of the province.

Kochia (Kochia scoparia) continued to spread into cultivated fields in southern Alberta.

Smartweeds (Polygonum sp.), Wild Buckwheat (Polygonum convulvulus) and Tartary Buckwheat (Fagopyrum tataricum), Hemp Nettle (Galeopsis tetrahit), Corn Spurry (Spergula arvensis), and Green Foxtail (Setaria viridis) are becoming more significant as weeds susceptible to 2,4-D are removed by spraying. Dicamba and TCA have not yet been used extensively to control these weeds.

Storksbill (Erodium cicutarium) was located in several different parts of the Peace River area. It is not of any economic significance as yet.

Hawksbeard (Crepis tectorum) continued to spread and is causing concern, particularly in the north-central parts of the province. No herbicide will control it selectively in grain.

Knawel (Scleranthus annus), a small fine plant, was located in the Viking area growing on level land; while it is dwarf in nature it has seriously reduced the barley stand where it grows.

Weed Inspection and Enforcement

(a) Agricultural Fieldmen in Municipalities

There were fifty-five permanent agricultural fieldmen, ten full-time assistants, and seventy-seven part-time weed inspectors actively engaged in weed work in municipal districts, counties and improvement districts where Agricultural Service Boards are established. As a result of an ARDA project for weed control, the Service Board weed control programs have been significantly expanded.

(b) Weed Inspection in Improvement Districts

There were ten weed inspectors working in Improvement Districts during the summer months in areas where there were no Service Boards. Because of lack of funds in some improvement districts where settlement is small, there was difficulty in obtaining personnel for those regions.

(c) Regional Weed Supervisors (Provincial)

One regional weed supervisor was appointed for the summer months. He worked very closely with agricultural fieldmen in assisting and encouraging them in their regulatory work. A considerable amount of his work was also with ten weed inspectors in eighteen improvement districts.

(d) Weed Inspectors in Cities, Towns and Villages

All urban municipalities were reminded to appoint weed inspectors for their area resulting in excellent co-operation attained in this regard. The Supervisor from this division attended a number of council meetings to help set up a practical weed program.

(e) Official Notices Issued Under the Noxious Weeds Act

The following table shows the number of official notices served by weed authorities (other than in cities, towns and villages) to land owners in municipalities; (1962-1964 records are listed for comparison purposes).

Year	No. Notices to Destroy Weeds	Acres Affected	No. Notices to Prohibit Seeding	Acres Affected	No. Notices Prohibiting Threshing	No. Court Cases
1962	2,174	48,826	497	19,954	10	9
1963	2,145	41,859	617	25,394	8	11
1964	1,759	35,992	624	24,701	5	10
1965	1,664	43,274	567	20,880	5	3

Well over 2,000 farmers were served official weed notices and nearly 21,000 acres of land were prohibited to be seeded due to serious weed infestations.

Chemical Weed Control

(a) Selective Herbicides

There were 6,395,000 acres or about 53% of cereal crops treated for weed control with 2,4-D, MCPA and related compounds. As a result of very adverse weather conditions during the spray period, the spray acreage was reduced by 1,419,000 acres as compared with 1964.

2,4-D and related compounds were the main herbicides used. Ester formulations continued to take the lead with low volatile and amine forms increasing. Dicamba was used to a limited extent where buckwheat and smartweed were serious problems. TCA use was not increased in spite of heavy incidence of green foxtail. Both Avadex and Carbyne have been accepted for wild oat control with highly significant increase in treated acreage this year.

There was 23,197 miles of roads and 2,306 miles of brush sprayed for weed control. About 2,000 miles of irrigation ditches were also treated for brush and weed control, a significant increase over last year.

Seventeen municipalities (Service Boards) out of fifty-five handled agricultural chemicals for sale to farmers. This was eight less than in 1964.

(b) Soil Sterilants (in Municipal Weed Control Programs)

Soil sterilants were supplied to municipalities for use in a number of programs under the Agricultural Service Board. On private land, the farmer shared one-third of the cost of sterilants, the remainder was shared equally by the Department and Municipality. On roadsides the Department shared the cost equally with the municipality.

The kind and amount of soil sterilants used in the last several years is shown below:

Sterilant	lb. 1959	lb. 1960	lb. 1961	lb. 1962	lb. 1963	lb. 1964	lb. 1965
Sodium Chlorate	229,040	243,040	254,688	225,232	185,284	215,264	234,976
D Bor Granular	90,150	111,300	94,200	129,350	140,450	140,500	136,400
Polybor Chlorate	75,340	85,300	88,403	73,930	92,665	72,460	58,020
Conc. Borascu	35,700	8,400	11,700	17,800	......	......	......
Monuron	......	2,000	......	......	......	......	......
Benzabor	......	......	2,000	6,825	3,375	1,800	1,475
Monobor Chlorate	......	......	......	......	......	......	37,500
Total:	430,230	450,040	450,991	453,137	422,074	430,024	468,371

(c) Spray Equipment

It is estimated that there are 24,000 farm owned field sprayers in Alberta. To promote proper and safe sprayer use, six field days and other meetings were held in June with an average attendance of twenty-two farmers.

Weed Control Trials and Demonstrations

Seventy-four weed control demonstration plots were set out in 1965. Only registered herbicides or those in category "A" which showed very good promise according to the National Weed Committee report, were used in the trials. Accordingly, work was done using 2,4-DP, picloram, bromoxynil, and paraquat. Of interest were additional trials put out in conjunction with commercial organizations whose personnel assisted the field staff. Some time was spent with agricultural fieldmen assisting in putting out the trials.

Trials using TCA on green foxtail control were again set out to observe effects on grain and weeds. Some damage to barley was noted especially on sandy loam; otherwise TCA showed good possibility in Alberta.

Two large soil sterilant projects set out at Millet and Hardisty a few years ago in conjunction with the Lacombe Experimental Farm were toured to observe the performance of various sterilants. Picloram showed very good promise for deep-rooted perennials.

Trials on Field Scabious conducted for the past two years resulted in a 250 acre spraying project undertaken by the Department of Lands and Forests using a mixture of picloram and 2,4-D. Results appeared satisfactory this fall.

Work on other trials with Allied Chemical Services, U.S. Borax Corporation, May & Baker, Dow Chemical and a number of other Companies with various herbicides on weeds of economic importance in Alberta continued in 1965.

Project 2—Weed Control With Forage Crops

Under this special policy, the Department shared equally with the farmer the cost of forage seed for weedy fields such assistance to apply to 20 acres per farm or 30 acres in special cases. There was a limit of fifteen applications per municipality. This year 260 farmers participated in the project and seeded

62,917 pounds of recommended forage seed to combat special weed problems. The project was supervised by local agricultural authorities.

Weed Control on Crown Land

Agricultural Fieldmen and Improvement District Weed Inspectors investigated and took action on many weed problems on Crown land. In a number of cases unoccupied Crown land was leased to adjoining land owners with special lease concessions granted. In eight cases, expenses incurred in controlling weeds were paid from the Department of Agriculture appropriation, the same subject to recovery should the land be sold.

After several years of coping with the weed problems around Miquelon Lake special arrangements were made by the County of Camrose to spray weeds on Crown land adjoining this lake. A protest was lodged by members of the Provincial and Federal Game Branch and the University of Alberta Biological Sciences Department that such spraying would interfere with the two research projects carried on in the area. The spraying program was postponed for the year but investigations are continuing as how to best resolve the weed problem in situations of this kind.

Roadside Seeding, Mowing and Spraying (Weed Control)

(a) Municipal Roads

Most Municipalities have adopted the policy of backsloping and seeding roadsides to a suitable grass mixture as a weed control measure. The extent of this is shown on the table below:

	1962	1963	1964	1965
Miles of roads backsloped	2,913	2,587	2,770	2,337
Miles of roads seeded	2,914	3,021	2,915	2,371

Under the Agricultural Service Board roadside seeding program the Department supplied 60,400 pounds of forage seed to municipalities at no cost. Significant additional quantities were purchased by municipalities for this purpose.

There was approximately 21,400 miles of roadsides mowed and 23,197 miles were sprayed for weed control.

(b) Government Highways

Beginning in 1949, the Weed Control Division has seeded roadsides on Government highways using its own equipment and personnel. In 1965 the Department of Highways assumed this responsibility. They have purchased hydro-seeders and mulchers for use in their program.

Alberta Advisory Weed Committee

(a) The seventh meeting of the Committee was held in December, immediately after the National Weed Committee (NWC) meetings at Calgary. The Alberta Committee accepted the report and recommendations of the NWC with the exception that the Alberta committee decided to postpone its acceptance of the proposals for use of picloram (Tordon) in grain crops pending additional research on the subject for at least another year.

(b) Sub-Committee on Specialty Crops

A special sub-committee of the Weed Advisory Committee worked on recommendations for controlling weeds in specialty crops. Results of tests at the Brooks Horticultural Station and Lethbridge Research Station were reported and discussed at the Weed Advisory meetings. A mimeographed leaflet on this topic was prepared.

Agricultural Service Boards

A new Agricultural Service Board was organized at I.D. 131, Nampa, making now a total of fifty-five Service Boards operative in Alberta.

Practically all of the weed work in municipalities was carried through the Service Boards. Provincial weed work and related activities, regulatory and extension-wise, were closely associated with the Boards.

Upon the recommendation of the Board, there were forty-eight quarter-sections of land placed under supervision with 198 held under supervision from previous years. Thirteen quarters were released from supervision. There were also two quarters placed under reclamation, 68 were continued under this control and eight parcels were released.

Among many other weed control activities the Service Boards held 191 field days and conducted thirty-seven tours, with the Weed Control Division taking part in sixteen of these.

The ARDA Land Reclamation Project, outlined in the 1964 Annual Report (see page 19) was incorporated into the Service Board Soils and Weed Control program. As a result this project was operative in every municipality.

The Agricultural Service Board Act was amended which provided for the establishment of Agricultural Committees in Counties. These in effect become the Agricultural Service Board with Councillors only on the Committee. The amendment also provided for an appointment by the County Council of an Advisory Committee.

Miscellaneous Activities

Starting in the early part of the year there were two short radio talks given on the topic "Weed Chemicals—What's New?". Radio talks continued during spring and summer on many timely weed topics and related subjects, totalling fourteen in number.

There were four television shows made covering both weed control on fields as well as in gardens and lawns.

Twenty-four press releases were prepared for "Farm Notes", a weekly provincial release.

A new leaflet "Chemical Weed Control in Field Crops" was published this year. A number of other pamphlets were revised and printed, including a poster "Know Your Weeds".

Up-to-date information on herbicides and other weed topics was issued in a form of leaflets and distributed to District Agriculturists, Agricultural Fieldmen and Weed Inspectors.

The Supervisor of the Weed Division spoke at sixteen Short Courses on timely and problem weed topics.

This Division again organized and conducted Agricultural Chemical Schools for dealers, agents and farmers in a region. Eleven Schools were held throughout the province at Grande Prairie, Lethbridge, Edmonton, Wainwright, Vegreville, Calgary, Castor, Three Hills, Ponoka, High Prairie, and Athabasca, with a total attendance of 896. There were an additional forty-four Dealer Schools organized locally by Agricultural Service Boards. Because of the good response, Schools will be continued in 1966.

This Division assisted with the arrangement and took part in regional Service Board Conferences at Lethbridge, Red Deer, Castor, Two Hills and Stony Plain.

A special weed control workshop was held for District Agriculturists, Agricultural Fieldmen and Weed Inspectors at Lethbridge, Wetaskiwin and Fairview. Legislation was reviewed and actual problems were worked out.

REPORT OF THE SOILS DIVISION

Soils extension and administration work was carried out during most of the year under the combined Soils and Weed Control Division. On October 1, a new Division of Soils was established to be responsible for the administration of soil conservation programs and policies in the province, to administer legislation respecting soil conservation and to provide farmers with research information on soils and fertilizers.

General

Alberta farm land was not affected by wind erosion losses as seriously in 1965 as in the previous year. However, farms on which wind erosion has been a problem in the past continued to cause concern. Municipalities requested stricter measures under the Soil Conservation Act. An annual survey conducted through Agricultural Service Boards indicated approximately 700 parcels of land were seriously affected by wind erosion damage as compared with over 2,100 in 1964. On the other hand, 2,197 parcels of land were affected by water erosion where 1,066 parcels were damaged in 1964. Dry soil conditions combined with a rather slow spring thaw tended to reduce the much greater hazard anticipated in the early spring. This Branch co-operated with Agricultural Service Boards in conducting seventy-seven gully filling demonstrations by providing advice on the technical aspects as well as providing financial assistance.

Administration

Soil Reclamation Project (Project 1)

This project was continued to assist District Agriculturists to promote proper soil conservation practices and to reclaim land by the use of forage crops and fertilizers. One-half the cost of forage seed and fertilizers for twenty acres was paid by the Department under this project. The following table shows the extent to which this project was used in the past six years:

	1960	1961	1962	1963	1964	1965
No. of demonstrations	256	264	307	316	303	304
No. of D.A. areas participating	28	27	27	32	25	23
Pounds forage seed supplied	54,654	66,178	68,272	70,130	68,705	61,165
Pounds fertilizer supplied	5,880	22,680	4,400	1,600	8,000	7,040
Total acreage	......	6,316	6,800	7,000	6,900	6,080

Publications

This Division was responsible for the revision of Publication No. 70, "Fertilizer Recommendations in Alberta". The recommendations are compiled by the editorial committee of the Alberta Soils Advisory Committee. No other publications were printed or revised during the year, however mimeographed releases on surfactant soil amendments and liquid fertilizers were provided for use by the field staff.

Alberta Soils Advisory Committee

This Committee held two meetings during the year and continued to advise the Department through the Crop Production Board on recommendations and policies regarding soils and soil conservation in Alberta. Items of concern of the Committee were the sales of new fertilizer and soil amendments and their control under Federal legislation and the need to establish an Advisory Committee on soil testing.

Legislation

The Soil Conservation Act, in effect since 1962, was administered by this Division through the Soil Conservation officers in municipalities. Three notices under the Act were issued compared to eight in 1964. Two municipalities passed by-laws regarding stubble burning during 1965. Eighteen municipalities now have by-laws controlling top soil removal and seventeen municipalities have by-laws controlling the burning of stubble and straw. These by-laws provide for control by a system of permits.

Extension

This Division assisted in conducting fertilizer demonstrations in twenty-six municipalities. Some 900 cereal grain samples were threshed for yield determinations on a number of these demonstrations. The interpretation of results were returned to the respective districts as well as included in the compilation of the Alberta Soils Advisory Committee.

Farmers continued to make increasing use of fertilizer in crop production. The amounts sold in Alberta in the past seven years are shown below:

	1959	1960	1961	1962	1963	1964	1965
Tons	65,185	79,878	104,000	126,865	169,273	224,182	252,188

This Division in conjunction with the Extension Branch took part in eight short courses and farmers' meetings on topics of soil management, fertilizer use and recommendations and soil testing. Personnel from the Soil and Feed Testing Laboratory also assisted in a number of farmers' meetings. Some time was spent at the Soil and Feed Testing Laboratory during November on soil analysis interpretations.

Other meetings attended were the Manitoba Soil Science and the Western Canada Fertilizer Association Workshop meetings held in Winnipeg in December. A number of Agricultural Service Board Regional Conferences at Two Hills, Castor and Rocky Mountain House were attended. A preliminary survey was conducted on a saline area in the County of Smoky Lake in the fall with the possible reclamation of the affected farm land.

Miscellaneous

The Supervisor of Soils and Weed Control carried on much of the soils extension while A. W. Goettel was on leave of absence on a Canadian Colombo Plan Land Use Survey in East Pakistan.

CROP PROTECTION AND PEST CONTROL

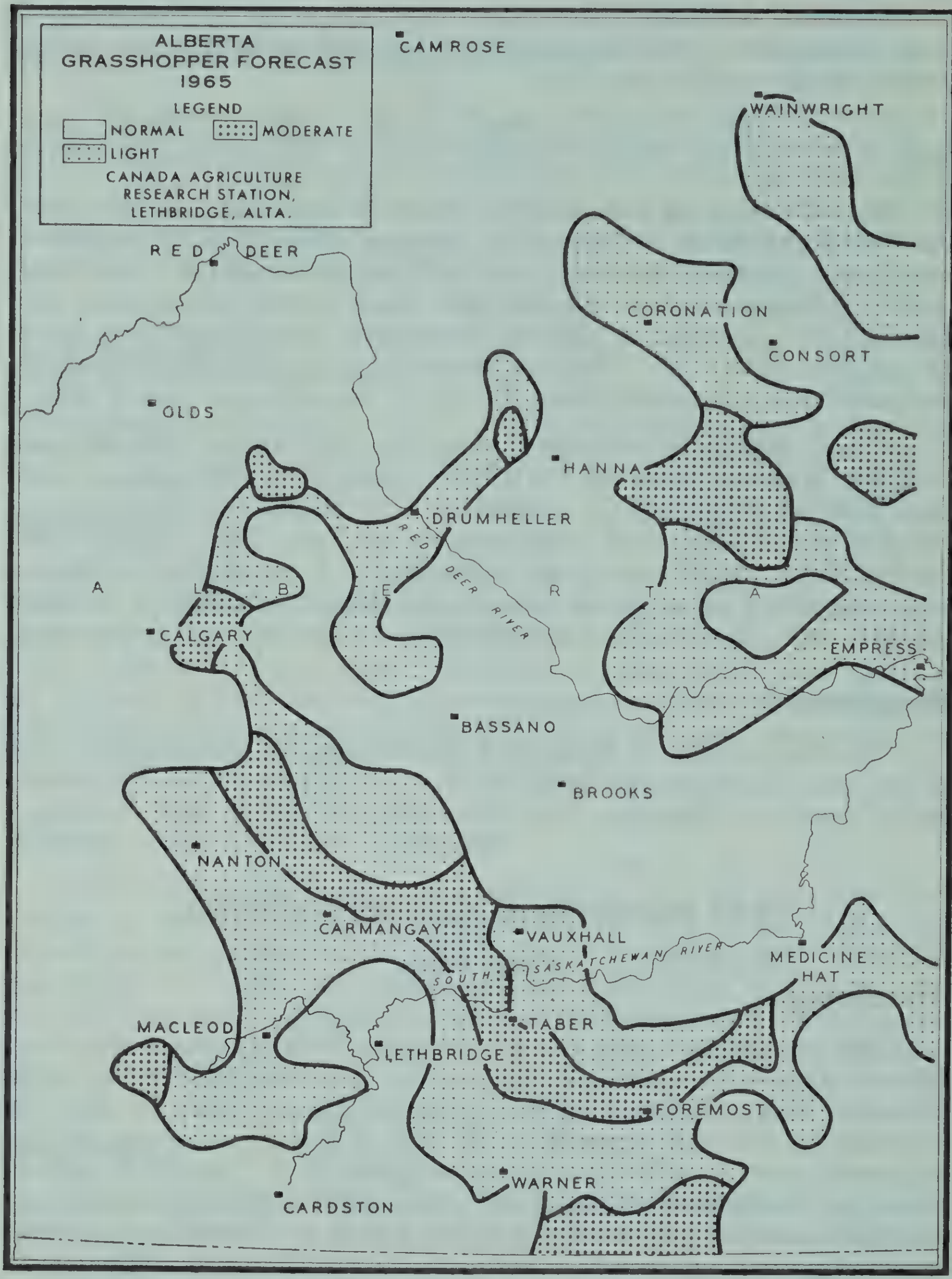
Crop Pests

Grasshoppers

For the second year the grasshopper infestation in southern Alberta showed a decrease, amount to ⅓ of the 1964 area. The decrease was attributed to wet weather during 1964-65 and the increase in natural enemies. Of the 10.8 million acres in the outbreak area, 8 million acres were rated "light" and 2.8 million acres as "moderate" infestation. The clear-winged grasshopper declined most; the two-striped species and the migratory species especially were prevalent through most of the area. Scattered outbreaks were also located in the Athabasca and Fort Vermilion districts.

The accompanying map shows the approximate areas and levels of infestation. Abnormally cool, damp weather delayed hatching of the 'hoppers. The growth of crops and native plants exceeded development of the 'hoppers. Little damage occurred since 'hoppers fed mainly on native grass and seldom migrated into seeded crops. Insecticide use was considerably below that expected.

Under the grasshopper policy, the Department distributed Dieldrin, Malathion and Dimethoate insecticides at cost, less handling and shipping charges, through municipal and district offices. Dieldrin was recommended for use on non-feed crops and on cereals to the shot-blade stage of growth. Dimethoate and



Malathion were used on forage, pasture and livestock feed, to prevent residue problems. Checks by provincial and municipal workers showed that farmers generally used control chemicals properly. Each purchaser of insecticide was required to sign a declaration which emphasized correct use and placed the responsibility for misuse on the applicator.

The grasshopper forecast, policy and map were printed and sent to municipal and district offices and other interested agencies. Information on control was up-dated by the revision of Publication 145 "Grasshopper Control in Alberta". Publication 139 "Chemical Control of Field Crop Insects—1965" was revised for information on 'hoppers and other major crop pests, and several mimeograph sheets were circulated on timely topics.

The following table compares 1965 data on insecticides and size of infestation with that of 1962-64:

	1962	1963	1964	1965
Acres Land Infested	15,500,000	19,700,000	16,000,000	10,800,000
Acres Crop Menaced	2,500,000	3,250,000	2,000,000	1,300,000
Acres Crop Destroyed	25,000	15,000	4,000	500
Lb. Tech. Dieldrin Used	63,750	40,000	10,040	1,060
Lb. Tech. Malathion Used	175,650	36,000	1,450	250
Lb. Tech. Dimethoate Used	......	52,200	5,500	540
Acres Sprayed—Dieldrin	1,020,000	640,400	160,600	17,000
Acres Sprayed—Malathion	351,300	58,600	1,900	350
Acres Sprayed—Dimethoate	......	278,200	29,300	3,000

The 1966 grasshopper forecast received from the Lethbridge Research Station indicates a further decrease for the coming season. Infested areas are expected to be only ⅓ of the 1965 infestation and most of the outbreak rated as "light".

Cutworms

Damaging infestations of Pale Western Cutworm occurred mainly in southern Alberta. Infestations were particularly severe in the Lethbridge-Coaldale districts where more than 4 larvae per square foot were found. The use of insecticides gave good control and reseeding was at a minimum.

The Red-backed Cutworm occurred only in spotty infestations in the area between Olds and Edmonton. Damage was light and confined mainly to vegetable crops.

The Army Cutworm occurred in scattered infestations across southern Alberta, with damage to spring wheat and mustard reported from the Bow Island and Warner districts.

The 1966 Cutworm forecast, prepared by the Lethbridge Research Station, was mimeographed and supplied to municipal and district offices.

Wireworms

Wireworm damage remained low except in a few fields where cereal seed was not treated. Some damage also occurred in potato and other root crops where soil treatment was not used. Municipal seed cleaning plants treated over 1 million bushels of seed with wireworm insecticide or about 8% of the seed cleaned. The storage of wireworm treated seed remained a problem. A special project was undertaken, in co-operation with the Supervisor of Special Projects and the Saskatoon Research Station to get information on the effects of storage of treated seed on germination and insecticide efficacy. Department staff commenced 12 monthly seed treatments in May with 5 common wireworm compounds applied to wheat and barley for each treatment.

Other Cereal Crop Insects

Wheat Stem Sawfly damage increased in the south-eastern part of the province, as it has for the last 4 years. Generally the damage was moderate but a few fields were cut 40% or more. Resistant varieties were recommended for such areas since

Rescue, Chinook and Cypress accounted for only 6.7% of the wheat acreage in Alberta. The outlook was for greater damage with a return to drier conditions.

Say's Stink Bug was considerably reduced, as compared to 1963-64, as a result of better moisture conditions.

Aphids and Thrips on cereals were considerably reduced from the high levels found in some districts in 1964. Light damage from Aphids on wheat heads was reported from Drumheller and Thorhild but no chemical control was necessary.

Forage Insects

Sweet Clover Weevil was widely distributed across the province. Early season damage was reported from the Lacombe-Red Deer and Smoky Lake areas. The Lethbridge Research Station continued a study project on cultural and chemical control measures. The Alfalfa Weevil, first discovered in southern Alberta in 1954, was now well established and caused serious damage in the Lethbridge area. The Pea Aphid caused damage in mid-season to some alfalfa fields in southern Alberta. Clover Thrips were reported at levels of 30 to 50 per head of alsike and red clover from north-central districts and the Peace region.

Vegetable and Special Crop Insects

The Flea Beetle was prevalent at various levels on rape in the north-central area and on sugar beets in the south. Where used early, chemical spray gave effective control. Field testing was conducted using lindane seed treatment of rape as a preventive measure. Control of the beetles was effective and practical by this method where beetle numbers were high.

A Looper worm, tentatively identified as the Alfalfa Looper, occurred in most rape fields of the southern Peace in mid-July. Damage ranged from slight to complete stripping of flowers, pods and leaves. Some insecticide was used with good control reported. However spraying was discouraged because of tramping damage by ground equipment and the possibility of residue problems from air spray application. The loopers pupated within about a week of the time the outbreak was discovered. Fortunately a second generation did not develop.

Root maggots continued as a serious pest on onions, radishes, cabbage, turnips and sugar beets. Onion maggot resistance to Aldrin was noted in a commercial field in the Edmonton area. Several alternate insecticides were field tested. The Lethbridge Research Station tested new controls for root maggots on turnips and sugar beets. Only a few hundred acres of sugar beets were treated compared to 12,000 acres treated in 1964. The recommendation for use of Heptachlor was discontinued since residues were found in beet pulp from the 1964 treated crops. The new insecticides, Ethion and Trithion, were used on a limited scale because of higher cost and less effective control. Also root maggots caused less damage than in previous years.

Shelterbelt Insects

The Forest Tent Caterpillar caused light to severe defoliation of aspen poplar in scattered areas across northern Alberta. Most damage occurred within a 40 mile radius of Lake Wabamun. The outbreak has gradually decreased over the last few years. Shelterbelts and ornamentals in urban areas, parks and resort areas, and on farms, were protected effectively with DDT sprays.

Spider Mite and Spruce Sawfly were prevalent in some areas but less damaging than in past years. Aphids were common on shade trees and ornamentals but at lower levels, and were effectively controlled with phosphate insecticides. The Poplar Bud Gall-Mite was reported a continuing problem on hybrid poplar in some southern districts. Pear Slug was a common pest on cotoneaster, plum species and mountain ash but readily controlled with common insecticides. The Strawberry Root Weevil was a serious problem in spruce seedlings at the Department's Tree Nursery at Oliver and several methods of control were tested.

A new Publication No. 41 "Control of Insects on Ornamental Trees, Shrubs and Shelterbelts" was prepared, printed and distributed. The Department's 50% Grant for sprayers for insect control was not used during 1965. The number of municipalities with special sprayers remained at 21. Approximately 150 shelterbelts were sprayed with municipal and Department equipment.

Other Insect Pests

A number of problems occurred from stored grain pests such as the Rusty and Saw-toothed Grain Beetles, Carpet Beetles, Spider Beetles and Grain Mites. Information was supplied to farmers for stored grain problems and to householders where food or homes were infested. Clover Mite and Strawberry Root Weevil continued as common household pests. Garden Slugs were numerous and damaging in urban gardens under moist conditions. Numerous insect pests of crops and gardens were identified, in addition to those handled by the Crop Clinic. Publications on control methods and other information were supplied as requested.

Bird Problems

Blackbird damage to corn and sunflowers continued to be a problem in southern Alberta. The use of oats and other lure crops provided some relief, as well as the use of scaring devices. Field testing of Avitrol bait was conducted in 6 districts for reduction of blackbird and sparrow damage, in co-operation with the Lethbridge Research Station and the University at Edmonton. Initial results appeared promising but further testing was considered necessary. Sparrows and starlings were frequently reported as pests in warehouses, feedlots and farm yards. A number of controls such as live-trapping and roost repellents were tested. Information on available control methods was supplied for various bird problems.

CROP DISEASES

Diseases of Cereals

Covered Smuts and Root Rots of cereals were generally low. Loose smut in barley was abundant in northern and central regions with levels varying from trace to 40%. Wheat Streak Mosaic in the south was reduced from the outbreak level of 1964 but severe damage occurred in spring wheat south-east of Lethbridge. In most cases the infection originated from over-wintered volunteer winter wheat which was not destroyed prior to spring seeding. The Winter Kill of winter wheat was unusually high.

Stem Rust of wheat was light to severe, and caused considerable damage to Red Bobs and Garnet in the north-east and to soft wheat in the south. Leaf Rust of wheat was prevalent throughout the province. Where infection occurred early in the season, yield and quality were reduced. Barley Leaf Diseases, especially Net Blotch, were prevalent in most fields. Wet conditions also stimulated Wheat Scab, Glume Blotch and Powdery Mildew. Timely articles were issued on seed treatment and cultural practices for disease control. Municipal seed cleaning plants treated with fungicide 4,967,100 bushels or 41.6% of total seed cleaned, compared to 4,966,900 bushels in 1964. Four field tests were conducted with the Drill Box method of seed treatment.

Diseases of Other Crops

White Rust and Downy Mildew of rape were prevalent in most fields, with up to 10% in some fields of the Echo variety. Seedling Blight of flax and peas was moderate to severe in fields where untreated seed was used. The Bulb and Stem Nematode was found in 10% of the alfalfa examined in irrigated fields with infestations ranging from light to severe. Powdery Mildew was prevalent on most special crops. Fireblight of apples and mountain ash was less widespread but still a serious problem in urban areas throughout Alberta.

Diseases of Potatoes

(a) General

The annual field diseases survey was conducted in two stages for the first time. The early varieties were inspected by 6 inspectors in early August. The final survey began on August 23 with 10 inspectors employed. We had good inspection weather and infection was readily found. Blackleg and Rhizoctonia were more prevalent than in previous years, likely due to moist conditions which favored development. Leaf Roll, Wilts and other virus diseases were generally low, except in urban areas where certified seed is not commonly used.

(b) Bacterial Ringrot

The control program was continued in established Pest Areas. Several meetings were held to set up a municipal-provincial program in 5 of the main producing municipalities of southern Alberta. Municipal workers were initiated and involved to some extent in control measures such as chemical disinfection and steam sterilization.

With a good market and high prices, ringrot infected stocks were disposed of by the end of March. Growers generally cooperated well in cleaning up and disinfecting contaminated storages prior to handling certified seed. A few growers persisted in keeping culls and off-grade stocks. These were treated with sprout inhibitor on 12 farms by Department fieldmen and 19 official notices were served to obtain adequate control measures. Department high pressure sprayers working out of Edmonton and Lethbridge disinfected 21 cellars, plus machinery and equipment on 18 farms. Several municipalities also provided this service in the irrigation districts. More, large growers purchased sprayers and steam-sterilizers for year-round disinfection.

Certified seed lists were supplied to all commercial growers. Most growers with ringrot in 1964 planted certified seed. However certified stocks were insufficient due to heavy export of seed and high prices on the table stock market. Some growers were slow in arranging for seed or reluctant to pay $7.00 per cwt. and a lot of culls were planted. The deterioration in the ringrot record was considered mainly due to these factors.

The following table shows the crop situation and survey results by Pest Areas, with 1961-64 data for comparison purposes:

Pest Area	Year	No. Farms Inspected	No. Farms Infected	Acreage Inspected	Infected Acreage	% Infected	
						Farms	Acreage
Lethbridge	1961	178	64	7,077	2,590	35.9	36.5
	1962	168	40	7,143	1,934	23.8	27.1
	1963	161	60	7,045	3,316	37.3	47.1
	1964	120	51	6,130	2,919	42.5	47.6
	1965	125	51	7,931	4,824	40.8	60.8
Calgary	1961	35	4	261	4	11.4	1.5
	1962	28	0	321	0	0.0	0.0
	1963	19	4	237	11	21.1	4.6
	1964	16	2	219	4	12.5	1.8
	1965	16	4	202	47	25.0	23.3
Brooks	1961	38	11	2,014	551	28.9	27.3
	1962	36	5	2,270	220	13.9	9.7
	1963	35	7	2,477	260	20.0	10.5
	1964	35	11	2,461	337	31.4	13.7
	1965	38	11	2,896	367	28.9	12.7
Edmonton	1961	124	27	3,114	973	21.8	31.2
	1962	110	6	3,387	430	5.5	12.7
	1963	112	22	3,902	715	19.6	18.3
	1964	120	16	4,215	436	13.3	10.3
	1965	112	27	4,733	1,397	24.1	29.5
TOTAL	1961	370	106	12,466	4,118	28.6	33.0
	1962	342	51	13,121	2,584	14.9	19.7
	1963	326	93	13,597	4,302	28.5	31.6
	1964	291	80	13,025	3,696	27.5	28.3
	1965	291	93	15,762	6,635	32.0	42.1

A total of 15,762 acres on 291 farms was inspected. The Canada Department of Agriculture cooperated with certified seed field inspections in Pest Areas. The Field Crops Clinic diagnosed specimens from all 4 inspection districts. The total number of infected farms increased from 80 in 1964 to 93 which was a percentage increase from 27.5 in 1964 to 32.0. Infected acreage increased from 28.3%in 1964 to 42.1%.

Most infections occurred in trace amounts but a few fields showed levels of up to 5%, indicating that the operation was negligent. Control measures were discussed at grower meetings and through mailed articles. All growers with ringrot infection were contacted by registered mail and by several personal interviews, to advise and assist with orderly crop disposal and control measures. The new Publication 178 "Bacterial Ringrot of Potatoes in Alberta" was distributed to growers, as well as various publications and disease charts. Plans to deal with the problem were coordinated with the Alberta Potato Growers' Association, Inspection Services and growers' selling agencies.

LIVESTOCK PESTS

Cattle Grubs and Lice

Livestock systemic insecticides, used as a spray or pour-on in the fall, gave effective control of grubs and lice from one treatment. These chemicals came into more widespread use, except on dairy cattle where rotenone was the only insecticide recommended. Field testing and promotion of safe use of systemics was continued. Several districts organized larger control areas for more effective control of warbles. The pour-on method increased in popularity and has replaced spraying operations to some extent. Most Agricultural Service Boards provided sprayers for demonstration or service spraying, and some supervised the application of pour-on in community projects. Some 95 demonstrations were held. The Boards treated 1,100 herds with 113,600 cattle for warbles and lice. From surveys of chemical sold, field reports and packing plant records, it was estimated that 40% of the cattle were treated.

A total of 22 field trials were conducted with: (1) backrubbers for fly and louse control, (2) new systemics or new formulations of standard products, (3) insecticide impregnated minerals and (4) treated cords and bands for housefly control. Survey work was continued on the biting black fly problem in the Athabasca-Lac La Biche area, in cooperation with the Fish and Wildlife Division and the University Zoology Department. Publication 167 "Dairy Pesticides" was revised and distributed, along with Publication 157 "Control of Livestock Insects". A paper on dairy insecticides was given at the Dairy Fieldman's Conference and an outline on the warble control program was given at a meeting of the Meat Industry Coordinating Committee. Several dairy field days were attended on insect control. Several timely articles were prepared for TV, radio, the farm press and district offices.

Magpie Control

Few reports of magpie damage to livestock were received. Live-trapping or poisoning over winter provided control where needed. Control demonstrations with poison sets were conducted in 6 districts to train new department or municipal officials. All districts now have trained staff who can assist with individual or local control. Several municipalities conducted extensive winter control campaigns in cooperation with sportsman groups, and these were successful in greatly reducing magpie numbers. Publication 120 "Magpie Control in Alberta" and other printed information were supplied as requested. Agricultural Service Boards reported 410 poison sets and live-traps used and an estimated 13,360 magpies destroyed in winter control programs.

Coyote Control

During the fall increased numbers and damage from coyotes was reported in about half of the municipalities. Increased problems were attributed mainly to a lack of rabbits, mice and other natural food. Wolves, as well as coyotes, were more troublesome in northern settlements. A cooperative predator control program was initiated with the Fish and Wildlife Division, along Forest Reserves.

The following approved poisons were supplied free of charge to 87 districts which cover all settled areas of the province: cyanide guns (coyote getters), strychnine and sodium fluoroacetate (Compound 1080). Strychnine sets were preferred because they are easy to apply. Coyote getters were used by fewer stockmen since their setting requires more skill. The endeavor to recall guns that were not in active use, continued, in the interest of public and animal safety.

The following table shows the amounts of major coyote control material supplied and estimated coyote kills by the 3 poisons used, with 1961-64 figures for comparison purposes:

	Coyote Getters	Cyanide Cartridges	Scent (2 oz. Jars)	Strychnine (Pellets)	Estimated Coyotes Killed
1961	720	1,120	910	39,000	26,600
1962	230	1,780	1,050	53,000	28,800
1963	600	1,300	990	50,800	21,900
1964	340	1,130	575	38,800	21,900
1965	94	700	610	36,650	19,840

In fringe areas of settlement, coyote control was continued in cooperation with the Department of Lands and Forests. Five pest control officers were employed during the winter in Improvement Districts without Agricultural Service Boards. During the summer 8 weed inspectors handled coyote control along with regular duties.

The poison 1080 was used in sparsely settled areas to assist individual farmers using other control measures on their own land. Meat baits were injected with 1080 poison by department fieldmen and set by municipal officers. Under the cooperative program, the following districts used 1080 baits during the winter season:

District	No. Baits Set
Athabasca, County No. 12	9
Beaver, County No. 9	3
Cardston, M.D. No. 6	31
Flagstaff, M.D. No. 62	7
Foothills, M.D. No. 31	20
Forty Mile, County No. 8	18
Grande Prairie, County No. 1	10
Kneehill, M.D. No. 48	10
Lacombe, County No. 14	12
Leduc,. County No. 25	12
Lethbridge, County No. 26	3
Mtn. View, County No. 17	11
Newell, County No. 4	17
Paintearth, County No. 18	14
Pincher Creek, M.D. No. 9	13
Ponoka, County No. 3	7
Provost, M.D. No. 52	4
Red Deer, County No. 23	9
Stettler, County No. 6	8
Stony Plain, M.D. No. 84	2
Strathcona, County No. 20	3
St. Paul, County No. 19	11
Taber, M.D. No. 14	10
Thorhild, County No. 7	4
Vermilion River, County No. 24	10
Vulcan, County No. 2	6
Wainwright, M.D. No. 61	16
Wetaskiwin, County No. 10	6
Willow Creek, M.D. No. 26	12
Special Areas No. 2 & 3	13
I.D. No. 11	25
I.D. No. 22	9
I.D. No. 946	2
I.D. No's. 58, 65, 68 & 69	25
I.D. No. 101	1
I.D. No. 102	12
I.D. No's. 107 & 122	3
I.D. No. 109	10
I.D. No's. 124, 125 & 126	1
I.D. No. 139	3
TOTAL 1080 Baits, 1965	402

No new districts were added to the total of 80 districts approved in the past as areas where 1080 could be set. A larger number of districts shared baits and coordinated control programs on a regional basis. The following table shows the 1080 program for the last 5 years.

	1961	1962	1963	1964	1965
Number of 1080 Sets	605	573	368	448	402
Number Districts Using	53	59	47	52	47
Number Districts Approved	74	80	80	80	80

The Supervisor, his Assistant and 3 Fieldmen, working out of Edmonton and Lethbridge, serviced 47 districts with 402 baits. Four new municipal fieldmen were trained in control techniques and issued with Form B Certificates.

RODENT CONTROL

Pocket Gopher

The pocket gopher continued to damage forage, gardens and shelter-belts. Field tests were conducted for better control methods and more practical poison baits. Sixteen municipalities had machines available for mechanical bait application. These were rented to farmers for use in large area infestations. Up to 100 acres were treated per day and one machine application of bait gave about 80% control. Publication 124 "Pocket Gophers" and printed circulars were supplied for control recommendations to urban and rural residents. The Canadian Wildlife Service began a long term study of the habits and population dynamics of pocket gophers in the foothills region west of Nanton.

Other Field Rodents

Rabbit damage to ornamentals and shelterbelts was low since rabbits were scarce in most areas. Mice continued to damage nursery stock. Information on repellents and control methods was supplied as requested. The Department continued cooperative investigation and control work with the Department of Lands and Forests on Columbian Ground Squirrel in the southern foothills. With rabies prevalent in skunks in Saskatchewan, an increased program for skunk depopulation was commenced through pest control officers along the east border.

Norway Rats

The control program was continued in all parts of the province with particular emphasis on the east border. The following table shows the rat situation on December 31, 1965, with 1963-64 data for comparison purposes:

	Year	Verm. River County 24	Wainwright M.D. 61	Provost M.D. 52	Sp. Areas 2 and 3	Acadia M.D. 34	I.D. 11	I.D.'s 85 and 101	Totals
Premises Checked	1963	1,072	263	573	482	173	493	335	3,391
	1964	1,315	409	375	400	173	494	325	3,491
	1965	1,150	394	507	544	173	495	300	3,563
No. Infestations Exterminated	1963	28	6	4	11	2	4	11	66
	1964	83	21	63	20	4	6	1	198
	1965	68	6	23	19	1	4	0	121
No. Infestations Remaining Dec. 31	1963	2	0	0	2	0	0	0	4
	1964	8	1	7	0	1	1	0	18
	1965	0	0	0	0	0	0	0	0

A total of 121 premises were infested during the year as compared to 216 in 1964. By the fine, cooperative action of residents, pest control officers and other agencies, all known infestations were exterminated by the end of the year.

The program of coordinating action with Saskatchewan provincial and municipal authorities continued. Two special meetings were attended to improve and maintain liaison among the urban and rural municipalities on both sides of the border at Lloydminster. A regional meeting at Kindersley was attended to assist in the organization program of Saskatchewan municipalities. The assistance and cooperation provided across the east border by various department and municipal officials resulted in improved control of rats in both provinces.

In the main, rats were held along the 380 mile front from Montana to Cold Lake. Farther within the province, 68 suspected rat cases were investigated, with 8 found positive. Some 250 pest control officers were appointed by rural and urban municipalities to handle rats that invaded through shipping. The department continued the 50% grant toward salaries and expenses of municipal pest control officers in 6 east border districts. Two provincial officers worked closely with municipal officials and residents, and handled control in northern Improvement Districts. They also assisted in a complete survey of the County of Vermilion River where some problems were experienced earlier in the year.

Warfarin and Pival poison baits were supplied, free of charge, to residents in the east control area and for suspected cases elsewhere. The following quantities of bait were used: Ready Mixed—21,800 pounds and Water Soluble—1,200 packages. Estimates based on average rat infestations and amounts of poison used, indicate that over 27,000 rats were killed.

Educational displays and demonstrations were used at summer fairs, on TV, radio and other news media. Rat control films, colored slide series, mounted rat specimens and control materials were used and supplied for various meetings in Alberta and Saskatchewan. Newly appointed pest control officers were trained and supplied with information kits. Field testing was conducted with a new poison, Raticate, and with other new formulations and methods. Several timely articles were prepared for the press and department publications. A paper "Keeping Alberta Rat-Free" was given at the Northwest Mosquito and Vector Control Conference at Kamloops, B.C.

Pest Control Committees

The 9th annual meeting of the Pest Control Advisory Committee was held in December, with the Supervisor serving as secretary. The Wildlife, Predator and Conservation Sub-Committee met in November. The newly appointed Alberta Interdepartmental Committee on Pesticides met in June and December, with the Supervisor serving as Secretary. The annual meetings of the Western Canada Committees on field crop insects and livestock pesticides were attended. Various problems of mutual concern were dealt with on a provincial and regional basis.

Miscellaneous

The Supervisor and his Assistant spoke at 63 meetings, short courses and field days. Thirty-four conferences and committee meetings were attended. Eighteen articles were prepared for Farm Notes and the farm press. Twenty-two radio and TV interviews were made. The division cooperated with the Department of Health in establishing a training course for commercial pesticide applicators. The Supervisor chaired a committee of various provincial agencies to supply a background paper on pesticides for the National Conference on Pollution. Various investigations were carried out, in cooperation with the Food Residue Committee, on positive cases of pesticide residues at farms and processing plants. There were 345 field investigations made on various pest problems.

HORTICULTURE

Horticulture Services

Alberta farmers planted 2,012,835 trees from the Provincial Nurseries at Oliver and Brooks. This is a decrease of 129,495 from 1964. The number of farmers receiving trees was 4,952 a decrease of 266 from the previous year. Generally the weather at planting time was excellent and a high rate of survival was reported.

Tree Nursery—Oliver

There were 1,992,835 trees shipped to farmers. In addition 597,250, 3-0 conifer seedlings were supplied to the Department of Lands and Forests, 25,385, 3-0 spruce and pine to local Municipalities for School children, 7,633 mixed trees to be planted in Provincial Parks and 9,000, 3-0 Scotch pine sold for Christmas tree farms, a total of 2,632,105, an increase over 1964 of 135,175.

An inventory of trees at the end of 1965 included 2,166,230 trees for shipping in 1966 to Alberta farmers, 5,267,680 trees for future use in the farm shelterbelt program, 3,289,530 seedlings for the Department of Agriculture, 2,724,975 conifer seedlings for the Department of Lands and Forest and 15,775 larger trees and shrubs for Provincial Parks, a total of 13,464,190 trees. The staff at the Nursery made 350,000 hardwood cuttings of several varieties of poplar and willow. Eight thousand male Russian poplar were prepared and lined out to insure future propagating material of this variety.

1965 was a poor seed year and only small amounts of maple, honeysuckle and Siberian larch were collected. Two thousand and four hundred bushels of spruce and pine cones collected in 1964 were processed. In addition 300 bushels of pine cones were collected and processed.

One new personnel position was established at the Nursery making a permanent staff of five. Sixteen employees were hired for the summer months and sixty casual men were hired for the shipping season. Two men were employed for a nine-month period by the Department of Lands and Forests.

A new one-half mile shelterbelt of white spruce and one-quarter mile of Cherry Prinsepia were planted. Four hundred tons of manure were spread over 30 acres of land and plowed down. Three hundred and fifty yards of peat moss were dug by the staff from a site west of Bon Accord and hauled to the Nursery. New roads were constructed and culverts placed in the new area of the Nursery.

Seven hundred and fifty-one seed beds were planted and 800 others planted two and three years ago were maintained. Twenty-four tree seed germination tests were made. Four hundred and fifty-one pounds of seed were collected and 684 lb. of seed was purchased.

Ten organized groups (420 people) visited the Nursery. In addition officials from the B.C. Forest Service, Saskatchewan Forest Service and the Ontario Department of Lands and Forests visited the Nursery. Several hundred individuals also called at the Nursery. The Forestry Technician Course given by the N.A.I.T. used the Nursery on several occasions to train students. The Horticulture Division of the U. of A., also used the Nursery for teaching purposes. 4-H Clubs, Junior Forest Warden Clubs and Boy Scout groups received practical instruction at the Nursery. Staff from the Nursery spent 10 days at the Bugnet Historical Site clearing brush and pruning trees.

1965 was a good year for weeds and while chemical controls were used, a great deal of hand labor was needed to keep the Nursery clean. No serious diseases were found. For the first time strawberry root weevils were a serious problem both in the seed beds and the transplant beds. The insect preferred the spruce in this outbreak. Officials of the Crop Clinic are working on this problem.

The Nursery exchanged 8,000 over-size white spruce for 32,000 American elm with the City of Edmonton Parks Department. Tree shipping started on April 26th and was completed on May 21st, one of the latest starts in the history of this Nursery.

Seven lots of registered seed of grass and legume were cleaned for the Canadian Forage Seeds Project.

The Nursery staff made 136 germination tests for the **Department of Lands and Forests.** Five hundred and ninety-three new conifer seed beds were established and 573 old ones maintained. Five hundred and eight thousand one hundred and seventy evergreen seedlings and 1,875 lb. of seed were shipped to the ten Forest Division. Seven hundred twenty-three bushels of cones were cleaned resulting in 128 lb. of clean seed. At the end of 1965 there was 9,019 lb. of conifer seed in storage.

The bullet planting project was continued. Forty-one thousand one hundred ten seedlings were grown in containers and used to evaluate ten different methods of growing these in the greenhouse. Ninety-three thousand two hundred fifty, 3-0 conifer seedlings, surplus above demand, were transplanted on the Nursery. A small trial to evaluate the possibilities of growing seedlings in blocks of phenolformaldehyde was conducted. Essential nutrients were added to insure growth. This work will be continued in 1966.

Sixteen seed beds were maintained for private Companies, 18 germination tests were run for these firms, 2,510 lb. of conifer seed held in storage and 417 lb. of seed shipped to them in 1965.

Several hundred soft wood cuttings were rooted under mist for the Provincial Parks beautification program. The jack pine Provenance test, a co-operative effort between the Canada Department of Forestry and the Provincial Department of Forestry was continued. The Nursery maintained and supervised a poplar test nursery and a spacing study with seed beds in order to determine the most economical rate of seeding conifer beds.

The Nursery was used by a local TV station to obtain pictures for an agricultural program and for a program to show the conifer container project. This was used on a conservation program directed at School children.

Potato Production Improvement Committee

This Committee appointed by the Horticultural Advisory Committee is composed of commercial and seed potato growers from all the major producing areas of the Province and Government personnel interested in Potato Production and Marketing. It acts as an Advisory Committee to the Horticultural Advisory Committee. The Committee met in Calgary in November.

Tuber Indexing of Foundation Potato Seed

The service of indexing foundation potatoes was continued by the Field Crops Branch, the Horticultural Station, Brooks, and the Plant Protection Division of the Canada Department of Agriculture. Nineteen growers took advantage of this program and submitted 2,878 tubers for testing. Six hundred and thirty-seven tubers (22%) were turned down primarily because of virus disease. The following varieties were tested: Netted Gem, Pontiac, Warba, Norland, Bliss Triumph, Irish Cobbler, Cherokee and Kennebec. In addition to the above the Horticultural Station, Brooks, submitted 397 tubers from their testing and breeding program, 29% of these were discarded for disease purposes. The readings were made by Plant Pathologists.

Seed Potato Production

The following table is an 8-year summary relative to seed potato production in Alberta:

	1958	1959	1960	1961	1962	1963	1964	1965
No. of growers	61	68	62	57	51	50	45	59
No. of Fields Inspected	203	266	253	249	190	182	174	237
Acres Inspected for Cert.	1,615	2,070	1,847	2,196	1,617	1,607	1,576.5	2,880
No. of Fields Rec. Cert.	172	236	223	158	179	160	152	207
Acres Passed for Cert.	1,300	1,716	1,547	1,442	1,415	1,475	1,271	2,552

Horticultural Advisory Committee

This Committee is made up of representatives from the Research Stations of the Canada Department of Agriculture, University, personnel of the Field Crops Branch and representatives of the commercial and amateur horticulture industry in the Province. This Committee reports to the Crop Production Board.

Alberta Horticultural Association

The 13th Annual Meeting of the Association was held in Calgary on February 27th. This meeting was adjourned and completed on August 7th at Olds. The Executive meet three times during the year. The 11th Provincial Horticulture Show was held at Medicine Hat on August 13th and 14th. The Association again sponsored a Horticultural Judging School held at the Olds Vocational and Agricultural College on August 5th and 6th. Forty-nine Alberta citizens registered and took the Course. Mr. C. Crowhurst of Calgary was elected President.

Nursery Inspections

In co-operation with personnel of the Plant Protection Service of the Canada Department of Agriculture the Supervisor of Horticulture inspected five commercial Nurseries in the Calgary area. Due to other commitments it was not possible to inspect the Nurseries in Central and Northern Alberta. The inspection was done in August and is carried out primarily to check imported stock for diseases and insects. The Department issues a list of Prairie Nurseries.

Other Activities

The Supervisor of Horticulture visited 29 District Agriculturists' areas assisting with Tree Planting, landscaping and beautification of Alberta farms and Farmstead Planning. Other subjects dealt with included pruning fruits and ornamentals, production of special crops and the construction and care of lawns. He addressed 19 public meetings and assisted at the 4-H Leaders' Conference and acted as a judge at the 4-H Elimination Contest at Olds. He also assisted in judging at three 4-H Garden Club Achievement Days. Twelve interviews were given on the Department's daily radio program "Call of the Land" and one TV appearance on C.F.R.N. He took an active part in the TV program "This Business of Farming" to be shown in January, 1966. The filming of this program occupied several days in addition to the time spent preparing the script. Thirty-one press releases were published in the Department's Weekly Newsletter "Farm Notes". Thirty-seven trips were made to the Oliver Tree Nursery, two trips to the Peace River to address meetings and two trips to Southern Alberta to discuss problems regarding Special Crops and other Horticultural matters. Nine visits were made to the University to discuss matters of mutual interest. He is the Department's representative on the Edmonton Regional Planning Commission and attended nine monthly meetings, two executive meetings and three meetings of the Rural Roads Committee of this Commission. During the year he was appointed the Department's representative on the Provincial Planning Board and attended three regular meetings and one meeting to hear appeals. Five visits were made to the Crop Clinic to discuss matters of common concern. As a member of the Department's Marketing Commission Study Committee he attended eight Departmental meetings. He served on the local Committee responsible for planning the three-day meeting of the Great Plains section of the American Society for Horticulture Science which met in Alberta in 1965. He acted as a judge at six local Horticultural Shows. He is a member of the Executive of the Alberta Horticultural Association and responsible for editing the Association's official publication "The Alberta Horticulturist". Two trips were made to the Hinton area to inspect re-generation studies being carried out by North-West Pulp and Paper. He visited Ottawa to represent the Department at a Seminar convened by the Federal Centennial Commission. He also attended one meeting of the Alberta Agricultural Centennial Committee and represented the Department at two meetings of the inter-Departmental Centennial Committee. Two Field Trips were made with Inspectors of the Food and Drug Division of the National Department of Health and Welfare to gather samples of vegetables. These were analysed for possible chemical residue. Several hundred letters were written to answer inquiries on Horticultural matters. The telephone was used to supply information to hundreds of calls by residents of the City of Edmonton and District.

HORTICULTURAL STATION, BROOKS

Introduction

Within the limits imposed by staff, equipment, and a difficult season weatherwise, an attempt was made to service horticulture in its many phases. Priority was given to forwarding establishment of a commercial vegetable industry (the Pilot Plant Project) without neglecting the annual varietal trials. Growing of trees and shrubs and their distribution for shelterbelts and landscaping, supplemented by growing and distribution of tree and small-fruit stock, was a major enterprise. Breeding and testing in this last named area, a long-time effort, was continued and expanded. Work in ornamentals, both woody and herbaceous, was also continued and broadened somewhat.

Vegetable Production and Station Programs

Farmwork—The Station grounds have been steadily improved over the years. The alkali problem is still evident but as areas are being levelled and drainage improved, progress continues to be made. During the past season a deep drainage ditch was dug between the east station boundary and the land leased from Mr. Veiner of Medicine Hat. In late fall this drain was carried back through plots six and eight and now provides drainage for the entire section of the station north of the main supply ditch. This ditch is in the process of being reconstructed and is now built up to a level where seepage will be reduced. Ultimately, a lined ditch will be the only positive answer to this problem. Soil for building up this ditch was taken from plot four which will bring its level down so that it can be readily irrigated. Formerly this plot could only be sprinkler irrigated.

Levelling done this year on plot 13 involved the forming of three different terraces which makes it more suitable for Station work.

Ordinary farm crops such as grain and alfalfa have virtually ceased to be produced on the Station except for a 2-acre plot of grain in a crop rotation program. The alfalfa land will be needed next spring for orchard and vegetable plantings.

An unfavorable season was experienced with the spring and early summer being cold and wet, followed by a relatively early fall frost and snow in September. As a result, yields while fair, were not as good as in normal years.

Roads—Most of the gravel roads on the farm grounds were regravelled this year and are in good shape. The back entrance road was also gravelled and is now in good condition.

Construction—The vegetable cooler and onion dryer were completed. A new humidifier, installed in the vegetable cooler, functioned very well but a better humidistat control is indicated. An asbestos ceiling was placed in the onion dryer and a heater installed for drying and curing the onions. Performance could be improved with adequate thermometers for recording and controlling temperature.

Construction on five new greenhouses has been started and is progressing very well. An attempt will be made to have at least two houses in operation sometime during the winter. The houses are an all steel type with pipe being used for frames and rafters, 6-inch channel iron for gutters, and aluminum for sashboards. Different types of materials—glass, fibreglass, mylar, and corrugated plastic will be used on the different houses to appraise relative efficiency. Two shade houses are under construction directly east of the existing south greenhouse to be used in propagating work. An addition to the staff house has been planned but construction has not yet been started.

Farm Machinery—A new tractor rotary-tiller has done a marvellous job in assisting in soil preparation as well as weed control. The Lilliston cultivator acquired has operated very well in controlling weeds in row crops. The farm machinery is generally in good repair although some units are scheduled for replacement as they become too expensive to keep in operation.

Shelterbelt Tree Program—In the program of providing shelter-belt material for farmers, some 87,625 rooted cuttings and 268,300 trees propagated in the lath houses were shipped to Edmonton this fall. This material was dug directly from the lath houses or had been transplanted and grown-on for one season. An additional number of 58,193 fruit trees and seedlings await shipment in the coming spring. The lath houses are in various stages of repair but are still functioning. Stratifying of tree seeds for next year is partly completed and will proceed during the winter.

Commercial Vegetables—Under this program, carrots, parsnips, cabbage, tomatoes, cucumbers, onions, cauliflower, and corn were grown. The cold wet conditions during the first half of the growing period resulted in generally unsatisfactory yields and lowered quality. 'Titantents' performed fairly well, giving yields in cucumbers from 305 to 680 pounds per 100 foot row for slicers, and from 358 to 787 pounds per 100 foot row for pickling cucumbers. Direct seeded cucumbers gave meagre yields as they only began to produce just before the early frost killed the plants. In tomatoes grown under 'Titantents' yields ranged from 7 to 15 tons per acre. Quality of tomatoes was not good enough to warrant exploring marketing possibilities. Most were disposed of through local sales. Celery was a complete failure due to the plants bolting before reaching salable maturity. Corn was severely damaged by birds, and as marketing conditions were disorganized no attempt at sales was made. Onions were below average in performance and yields obtained ranged from 4 to 7 tons per acre. One trial of pickling onions did well and a yield of 5¾ tons per acre was obtained. Cauliflower was generally disappointing. Some of the heads went to bloom and the majority made loose unattractive heads. Cabbage performed fairly well. Control of cabbage worms was increasingly difficult requiring spraying twice a week. Carrots and parsnips performed below average but eventually a fair crop was obtained. Demands from local vegetable growers for use of the harvester unit delayed Station harvesting until frost made same impossible.

Vegetable Variety Trials

A cool, moist spring favored the development of radish and lettuce. In this area where tip burn is a problem, the crisp head lettuce varieties Osuego, Fulton and Minetto were very promising. Season conditions favored the development of Cole crops, except cauliflower which was completely destroyed during three weeks of severe heat in July. Several cabbage varieties have a very uniform development which would permit a one-harvest operation.

Wind damage was serious on pole beans and vine crops. Watermelon and muskmelon were destroyed by early frost. In general, the season was too short for proper ripening of squash and pumpkin. Corn quality was good and generally high yields were obtained. A number of new varieties appear promising for fresh market and processing trade. The season was short for field ripening of onions. Importance of drying facilities was emphasized, as it would have been impractical to store the crop in their harvest condition without same. Peppers had only reached marketable condition at frost. This crop will no doubt require the addition of hot cap trials to check increased yield under this cultural practice. Tomato screening and replicated trials were plagued by wind and general adverse conditions. Production was only beginning at frost. This did, however, allow evaluation of early fruit set. Several new parsnip varieties, which carry their width throughout their length, look very promising. The Castle pepper seed production program was a failure.

Pilot Plant Project

This project for the production of fresh vegetables for the Alberta market was greatly expanded during the past year. A five-fold increase in carrot acreage was noted. While one field was damaged by soil drifting and another by faulty weed spray, several profitable crops were produced. This produce was placed in the storage facilities at the Station.

Onion production was also expanded. One field had to be destroyed due to onion maggot. Two very satisfactory crops were harvested. The value of proper drying facilities was well emphasized; a relatively immature crop being cured to marketable condition.

Parsnips did not develop to quite the desired size due to shortness of the season. Yields, however, were satisfactory. Marketing problems occurred in the corn harvest, serving as a warning that emphasis must be placed on marketing information. This past season the Station involvement was mainly of an advisory nature with the growers doing most of the harvesting, grading, etc. Volume of produce severely taxed storage facilities but it was maintained in a satisfactory condition.

Equipment available to vegetable growers under the pilot plant project included—carrot harvester; washer-grader; bed shapers and seeders; onion dryer and storage cooler; grading tables and conveyors. The farmers engaged in this project have formed a Co-operative and have designed very attractive packages for their produce, which are well accepted by the Trade.

Tomato Breeding

Emphasis was again placed on re-assessment of selections for skin toughness and firmness of flesh. From 244 selections there were 8,714 plants set for growing re-examination. From these, 337 selections were brought in for re-growing and further evaluation. A very promising F_1 hybrid was observed in the field trials. This hybrid, the result of a cross between Brooks seedling No. 2113, and Red Bobs, was produced in the greenhouse crossing programs. One year's observation indicates this seedling produces a larger fruit than either parent. Its yield and plant vigor are outstanding. Large scale evaluation of this seedling will be undertaken in the coming year.

Potato Work

Breeding and Selection—Overall, during 1965, a total of 22,213 seedlings were grown at the Station. From these, 10,307 have been retained for further study. Number of crosses made and the selections remaining each year are tabulated in Table No. 1.

TABLE No. 1

Year when cross was made	Original No. of seedlings (greenhouse)	No. of sdlgs. remaining for 1966	No. of sdlgs. in early tuberizing trial in '65	No. of sdlgs. in National Adaptational trial in '65	No. of sdlgs. recommended in National Adapt. Trial for '66
1965	10,009	10,009	......	......	......
1964	11,929	144	......	......	......
1963	7,819	94	......	......	......
1962	9,800	30	......	......	......
1961	8,309	19	......	......	......
1960	7,249	2	4	......	2
1959	3,994	4	2	4	1
1958	7,278	2	2	......	......
1957	7,265	1	1	......	......
1956	6,619	1	1	......	1
1955	5,919	1	1	......	1

Five Brooks seedlings have performed comparably to Warba in early tuberizing. They are—B.P. 55-24-2; B.P. 56-19-5F; B.P. 59-14-5; B.P. 60-31-2; B.P. 60-64-3. The first two listed are also of good quality.

Potato Trial Work—the eight major trials conducted at the Station during 1965 were:

1. Prairie Replicated Regional Trial
2. Brooks Replicated Regional Trial
3. National Adaptational Trial
4. Brooks Adaptational Trial
5. Early Tuberizing Trial
6. Block Trials
7. Thinning Trials
8. Chipping Quality Trial

These trials were conducted mainly in co-operation with Federal Research Stations. Objectives of these trials are to find potato varieties which will be equal or better in all respects than —(1) the present standard main crop potato variety; (2) the present standard early crop potato variety; and (3) a variety which will replace all the varieties presently used in the chipping industry.

On the basis of the 1965 potato chipping trials the seedling F.5208 performed as well as, or better, than any standard variety presently used in the chipping industry.

Laboratory—Percent reducing sugar and percent starch determinations were conducted on twenty-five potato varieties and seedlings and assessment made of chipping quality and the tonnage of starch per acre. These tests were replicated 6 times

—three times during the growing period and three times from storage.

Specific gravity determinations were made of each seedling and variety, at each stage of harvest and also from storage. Paper chromotography was run on the tomato regional trial for the first time in 1965, to determine plant acids quantitatively and attempt to correlate ratio of same to earliness in ripening.

In co-operation with the Federal Plant Protection Division, a potato indexing program, involving approximately 5,000 tubers, was carried out in the laboratory and greenhouse to select material free from virus and bacterial ringrot for seed growers.

Tree and Small Fruits

During 1965, 283 trees were selected from the controlled cross **Malus** seedlings. Eight hundred trees were removed leaving very few unselected trees to evaluate in 1966. All trees in these orchards have now fruited. There are a number of selections warranting special attention such as B #188, a seedling of Heyer #12 x Dr. Bill. All selections have been included in storage tests.

Plum orchard selections have been made over the past nine years, during which time the best seedlings have been chosen. All remaining trees in the plum orchard are the selections and trees that will be used for seed supply.

Another block of plum seedlings of open-pollinated **Pruns nigra** included in the co-operative project was rogued. During the past four years this block had been observed for promising trees but nothing has warranted selection to date. A heavy crop was produced this season but quality of the fruit was poor. The number of trees has been reduced from 2,800 to approximately 300. Any trees that showed fair to good size and fair culinary qualities were left for further selection.

All strawberry varieties, selections, and seedlings, were planted out in one plot. The block included 128 named varieties planted in 10 meter rows and 86 selections of previous breeding work. From 118 different controlled crosses, some 4,500 seedlings obtained from the 1963-64 breeding program were also planted. During the winter of 1964-65, 46 varieties were used to make 154 crosses which resulted in approximately 4,000 seedlings. These are ready for field planting in the spring of 1966.

Winter kill and yield data were again taken on some 31 varieties of raspberry. The best five varieties, according to yield, were Trent, Madawaska, Rideau, Van Dyke and Herbert. Winter kill percentage was quite low on most varieties. Exceptions were—Newburgh, Thames, and Williamette, all of which had high incidence. Data on this work are now ready for publication.

The breeding program this year again includes some 30 strawberry and 14 raspberry varieties. Included will be selections of rambling raspberry which are now in the greenhouse.

Gooseberry and current varietal appraisals were continued and samples were processed for a taste panel evaluation.

Seventy-nine rhubarb selections were maintained along with 4 major varieties for future work. These selections and varieties are now established and ready for evaluation.

All cherry species such as **Prunus tomentosa, P. fruticosa** etc. were selected and marked for identification purposes. Qualities considered in this selection work were fruit size, fruit attachment, astringency, sweetness, winter hardiness, and general resistance to disease. Seedlings of **Ribes Albol** (Albol Currant) which were lined out for the past 6 years, re-selected, spaced to give better plants, and are being used in the tree distribution program.

Three hundred trees were added to the second test orchard, filling the area provided for this project. Survival of the trees was fair, but due to poor soil conditions growth on all the trees was very poor. Extensive damage also occurred from rodents during the 1964-65 winter.

The pear orchard was completely replanted during the spring of 1965 and now includes 15 varieties of pears and 300 Siberian pear seedlings, which became established although growth was not vigorous.

Ornamentals

In woody ornamentals the gathering of a wide range of materials, and testing of same under the unique environmental stresses inherent in the Brooks situation, continued. Two popular groups, the lilacs and roses, have been emphasized. Backbone of the **Syringa** collection was acquired from the Morden Research Station, which has continued to provide replacements and new stock. In addition, many rare stocks have come as scions from the Royal Botanic Gardens (Hamilton, Ontario), and the Morton Arboretum (Lisle, Illinois). Currently, over 140 varieties are in growth trials, Spring frosts adversely affected their usual profusion of bloom.

In **Rosa,** a nucleus of some twenty hardy species and hybrid shrubs has been built up to about four dozen cultivars. In addition some 200 garden varieties, suitable for cutting and exhibition, have been tried. About two-thirds of these have performed well and are still in growth under "mounding" protection. As they become available, hardy remontant varieties with good florescence from the current breeding of Skinner, Wright, Simonet, and others, are being added. A limited amount of own-root and rootstocks work is underway in roses.

Four groups of herbaceous ornamentals, major in point of varietal numbers on display, are under observation. Some 30,000 gladiolus, comprised of about 1,235 named varieties, occupy approximately one-half an acre annually. Basically a hobby collection begun 25 years ago, it now contains the "top fifty" ratings in annual societies sumposia since then. Peony varieties were built up to over 200 this year by addition of cultivars from the University of Alberta "Clarke Collection". Lilies, a relatively small group, display the Patterson introductions. Among the hardy Korean Chrysanthemums, 68 varieties have shown their worth in this area.

Continuing efforts were expended in beautifying the grounds to make the Station a point of interest and source of ideas for improvement of home grounds. Added this season was a quarter-acre plot of annual flowers along the entrance road. Containing 80 beds of different kinds and varieties of bedding plants, it was well received by the public. The tulip collection, the rockery and perennial borders, commanded attention in season.

Propagation

Starting softwood cuttings outside, in cloches under controlled mist, proved very satisfactory. The cuttings rooted under these conditions in 1964 were left in the propagation beds during the winter. Snow cover was the only protection and the survival was very good. In May of 1965 they were bagged into green plastic pertainers. The root system of most cuttings were excellent and continued good development during the summer. The following species were used—**Lonicera, Euonymus, Forsythia, Philadelphus, Spiraea, Caragana, Cotoneaster, Viburnum,** and **Cornus.** Very good results were also obtained with juniper cuttings using the same methods. Softwood propagation was undertaken in high cloches having both ends closed with movable plywood panel for ease of ventilation. In both seasons polyethylene covering was used and a mistamatic system installed. During this past year cuttings of Prunus **glandulosa,** P. **trilobum,** P. **Dropmoriana, Cornus alba elegantissima, Potentilla Moonlight,** and Montana junipers (established at the Station in 1961) were handled in the same manner.

Problems involving tree seed are still being investigated, with a view to obtaining uniform germination the first year. Various methods of stratification have been tried but the results were inconclusive. It may be interesting to note that Russian Olive seed, picked in March, stored in a cool place and seeded directly in the open in June, came up within two weeks. Germination was as good in this planting as that with seed which had been stratified the previous December.

Chemical control of weeds in the tree seed beds was not fully satisfactory. Proper timing and pre-seeding preparation for spraying were not achieved.

Herbicides

During the past year, herbicidal work was mainly of a maintenance nature. Early spraying of orchards, before leaf break, gave satisfactory control of early broad-leaf weeds. Follow-up applications in July of Reglone and Gramoxone, were quite satisfactory for the control of sow thistle. Generally good weed control was obtained on the grassland, roadside and waste areas by a spraying program over the entire season.

Seven different pre-emergent herbicides and post-emergent sprays were used on a large scale field trial of onions. Randox and CIPC mixtures applied as a pre-emergent gave satisfactory control of most broad-leaf weeds. CP3193 gave almost complete control of green foxtail, **Setaria viridis,** which is often a problem in this area and is sometimes called 'wild millet'. Post emergent applications of liquid Cyanamid once again gave erratic results, possibly influenced by rates used, time of application, temperature, and humidity. None of the above herbicides are considered effective against wild oats or sow thistle, and pre-plant incorporation of herbicides must be considered in future years. Limited trials with chemical weed control in potatoes proved promising and more extensive trials are warranted. Weed control in parsnips and carrots was again satisfactory with the normal application of 'Solan' and herbicidal oil. Linuron, a relatively new formulation, was tried as a post emergent on carrots at a 2 lb./acre rate and showed very promising results. Further work is indicated on pre-emergent rates on different soil types.

Weeds in the ornamentals block and shelterbelts were controlled with the use of Reglone and Gramoxone.

Insects and Plant Diseases

General spraying was carried out as required for the control of insects. As a result of 1964 spraying for pear slugs it was only necessary to spray those areas of **Prunus sp.** which were not covered at that time. This indicated relatively little movement of adult flies. Cabbage worms were difficult to control and repeated applications of various insecticides obtained only a limited control. 'Sevin' which proved very effective in 1964, was ineffective during the past season. This could indicate a build-up of resistance on the part of the insects.

Fungicides were given only limited use as few problems occurred. Fireblight remained a serious problem and more extensive spraying programs will be necessary to control the spread of **Erivinia amylanvia** the causal organism. Work done with a systemic bactericide, while inconclusive, indicated that this type of treatment provides a hopeful lead.

Some work was begun on the correction of mineral deficiencies appearing in some of our crops, celery in particular. Repeated foliar applications of calcium chloride were carried out in an attempt to control blackheart. Due to extensive damage by this disease the crop was not harvested and no valid reading was obtained.

Processing

Sixteen different kinds of vegetables, comprised of 253 varieties, were frozen to determine quality after six months of storage. From the previous two years' work, four outstanding varieties of rhubarb have been selected for freezer processing.

A pilot canning procedure was started using several different treatments on carrots. The most suitable canning procedure was selected and a comparison was made with a commercial product used in Europe as a delicacy. Further work is indicated, which may lead to a use for small cull carrots.

Twenty-one varieties of currants were canned in syrup to compare with last year's results. Green peppers were stuffed with red cabbage and pickled to present new uses of these vegetables; and a raspberry nectar for a home-made refreshment product was also sampled.

During the growing season, 80 potato varieties and seedlings from the National Potato Trials were processed at three different times for chipping quality. During the winter months the same potato varieties were boiled, baked and chipped from cold storage and from reconditioning. Sixty seedlings from the Brooks potato breeding program were also processed to test their culinary quality. Seedlings F5208 and B.P. 59-8-3 were outstanding in these trials.

Co-operative Programs

Station staff continued its cooperation with the Canada Research Service. Trials included evaluation of forage corn, sorghum-sudan hybrids, and sunflowers. Fertilizer co-operative trials were on onions and sweet corn. An onion varietal trial was also grown. Participation in the Prairie Fruit Breeding Co-operative program, the Ornamentals Varietal testing program, and the National Potato Trials continues. An electric soil heating trial was installed at the Station in co-operation with the Calgary Power Company Limited. Electric cables raised the average soil temperature from 8 to 10° F.

A trial plot was established to test the effect of Enzyme S.C. on moisture holding capacity and alkalinity of soils. Material was supplied by Enzyme Industries Limited and the soil testing is to be done by Dominion Soil Laboratory, Lethbridge.

Education

Three major field days, held consecutively, constituted the main effort of the Station's public educational program. These were the Vegetable Field Day, Ornamental Field Day and Fruit Field Day with a total attendance of 308 persons. Various groups and clubs touring the Station number 10. Technical groups visiting the Station to collect information and data were—(1) C.B.C. Camera Crew for the Centennial TV programs; (2) a soils group from the University of Alberta; (3) District Agriculturists from Central Alberta; and (4) the 1966 graduating class from the Faculty of Agriculture, University of Alberta. Station staff assisted at the judging of three major horticultural shows. Requests for speakers for short courses, garden clubs, horticultural group meetings, etc. was on par with that of last year, with an increase in greenhouse calls. One member of the technical staff was fully occupied with calls to the pilot vegetable growers. A major undertaking was the completion of the farmstead model to be used for the TV program "This Business of Farming". Three staff members also assisted during Horticultural Week at the Olds Vocational and Agricultural College. Visitors at the Station requesting specific information numbered 883, while casual viewers were estimated to exceed that number.

Climate

January and the first half of February showed high winds with severe and rapidly fluctuating temperatures; a low of -32° F was registered on January 8. Considerable snow, present during this sub-zero period, dissipated during the warming trend of late February which continued into March. Night temperatures in late March registered below zero. April and May produced seasonal average temperatures and little precipitation. The high winds of late May continued into June. Last spring frost, 28° F, occurred on May 19, but the weather remained cool, with a low of 34° F on June 7. Precipitation in June totalled 5.50 inches, most falling late in the month. July produced average temperatures and below average rainfall. August was hot, with 2.70 inches of precipitation. September was cold and wet, the first killing frost, 28° F, occurring on the 11th, followed by 2 inches of snow on the 26th. The growing season comprised of 116 days. Balance of the year was predominantly cold with intermittent strong winds and little precipitation. Exception was the 18-inch snowfall in the last half of November during which time the temperature dropped to -32° F.

REPORT OF THE APICULTURE SECTION

The 1965 honey crop was a record breaker. The estimated production of honey in Alberta was 18 million pounds, over ⅓ of the total Canadian crop of 46 million, these are respectively Provincial and Dominion records. The previous record crop in Canada was 45 million produced in 1938; that same year Alberta produced its largest crop of 2.5 million from 15,000 colonies. The number of colonies in Alberta in 1965 was 114,000 an increase of 30,000 over 1964. The production increase over 1964 was 10 million pounds.

The part of the province, south of Red Deer had a below average yield, while the area north, had an abnormally high yield.

Markets

Honey prices and markets remained firm with a slight increase in price over 1964, world markets firmed considerably; in spite of the largest Canadian crop on record no marketing problems were evident. Demand appeared to exceed supply.

Investigations

A new method of transporting package bees from California, U.S.A., was tried in 1965. Mr. Charles Paradis of Girouxville, Alberta chartered a C 46 aircraft and flew in a full plane load of bees. Technical assistance was provided by this Branch. Three thousand, 2-pound packages were involved. This method of transporting packages proved very successful. Control of temperatures has been the major problem in truck transportation. Temperatures near 55° F-60° F appear most satisfactory in trucking. It was found temperatures could be held about 10° F lower in the plane with no resulting problems. Packages were transported with no feed. Beekeepers receiving the packages were very satisfied with their performance. Transportation time was less than eight hours, so there was some concern over queen acceptance by these packages. Normally it is considered queens should be in the packages 48 hours before being released, however, this appeared to be no problem. Preliminary tests with half dosages of oxytretracycline (T.M. 25) for the control of American foulbrood appeared to give satisfactory control. Tests were conducted, using various mixtures of Benzaldehyde to repel bees from honey supers. Results varied considerably, more tests are necessary before it can be recommended as satisfactory, in the range of climatic conditions which exist in this province.

Methods of introducing queens to laying worker colonies was investigated, by sprinkling the bees and queen with sugar syrup, fair success was achieved.

Disease Control

A delayed honey flow allowed more time for inspection of colonies. American foulbrood and Nosema were the cause of most losses. European foulbrood has not been a problem in recent years. Tetracycline appeared to give as good control as oxytretracycline for American foulbrood.

	1964	1965
Number of colonies inspected	6,127	8,130
Number of apiaries inspected	440	510
Number of infected colonies	520	430

Only 8 cases of disease were found in commercial apiaries, 6 cases in the 10-100 colony group, the remainder were in the less than 10 colony group.

No European foulbrood was reported in 1965.

Statistics

	1964*	1965**
Number of colonies	83,850	114,000
Number of beekeepers	1,450	1,320
Average yield per colony	102	160
Total honey production ('000#)	8,590	18,240
Value of honey ('000 dollars)	1,267	2,700
Value of wax and honey	1,325	2,862
Price of honey per pound	14¾c	15c
Price of wax per pound	45c	45c

*Final

**Preliminary estimate

SPECIAL PROJECTS

As in past years the Seed Processing Plants were the main function of this office designated as Special Projects.

New Seed Plants were built at Oyen, Olds and Nampa, giving a total of fifty-six Plants in Alberta and part interest in the Plant at Dawson Creek, which was built in 1964.

The Provincial Seed Cleaning Co-operative Association Limited held their Annual Convention in Edmonton early in January, at which time the name was changed to Alberta Co-op Seed Processors Limited. This organization was formed eleven years ago to do collectively what the Plants could not accomplish individually. Due to the large increase in the number of Plants in the past few years and the amount of seed being handled the parent organization is becoming more active and assuming a more important role in co-ordinating the operations of the individual plants. The Alberta Co-op Seed Processors Ltd. was responsible for an economic survey taken by the Economics Branch, Alberta Department of Agriculture, for the fiscal year 1963-64. This survey brought many interesting results and many Plants have already changed their Policy in order to better their operations.

Regional Meetings, which for the past few years were held in the fall, were advanced to June of 1965, which is just prior to the end of the fiscal year. This change was made so that the individual Plants could incorporate any appropriate changes suggested at the Regional Meeting into their Policy for the next fiscal year. A three point program to increase the efficiency of the Plants was recommended:

(1) to adopt a seed cleaning rate schedule which would be least in the summer and gradually increase to a higher rate in the spring.
(2) to encourage farmers to erect self emptying seed bins.
(3) to advertise the services offered.

Considerable progress was made in having farmers clean their seed earlier in the year.

Below is a summary of the work done by the 54 Plants operating for the period July 1st, 1964 to June 30th, 1965:

Total Commercial Seed Cleaned	11,784,440
Total Pedigree Seed Cleaned	182,847
Total Seed Cleaned	11,967,287
Total Commercial Grain Cleaned	796,774
Total Bushels Cleaned	12,764,061
Total Bushels Treated (Fungicide)	4,967,137
Total Bushels Treated (Insecticide)	1,055,850
Average Number of Bushels Cleaned Per Plant	236,371

Minor changes were made in the design of the Plant to increase the capacity of bins feeding the treater and to increase the number of bins for grain storage. Other changes incorporated the screening bins into the crib structure. The overhead sacking room was eliminated and cleaners were re-arranged to permit a sacking and warehousing area on the main floor.

A project was started in May to determine the effect of storage on seed treated with insecticides for wireworm control.

CROP CLINIC

Laboratory Technician, Rita Brick, discontinued service with the Clinic in March, and was replaced in May by Mrs. Donna Shaw. The Supervisor returned from seven months education leave, on April 30th. During the year the Supervisor, and Dr. Henry, Plant Pathologist, attended 11 meetings, and 3 conferences. Three special investigations and 16 field trips were undertaken.

The following table lists the number of specimens received by the Clinic for diagnosis, identification, and recommendations.

	Diseases	Insects	Plant Identification	Misc.	Total
Cereals and Forage	123	29	......	......	152
Special Crops	19	6	......	......	25
Ornamentals	229	86	......	......	315
Shelterbelts	41	32	......	......	73
Vegetables	291	21	......	......	312
Fruits	87	30	......	......	117
Stored Products	1	2	......	......	3
Household	......	1	......	......	1
Miscellaneous	......	67	106	21	194
Weeds	......	......	156	......	156
TOTAL	791	274	262	21	1,348

Insects

A considerable acreage of rape in south-west Peace River region was defoliated by the cabbage looper in mid-July. A few cases of Hessian fly damage to wheat and barley occurred in the east-central Peace region. Thrip population were again high in alsike and red clover seed stands. Instances of poor seed set, however, were believed due to poor environmental conditions, and not to any activity of the thrips. Grain aphids, in parts of central and southern Alberta, multiplied rapidly on wheat crops delayed in maturity by excessive wet weather. The beet webworm was also present on some rape crops in this area, and Bertha armyworm occurred on at least one flax field in the Drumheller area.

Horticultural insects again accounted for over two-thirds of all insect specimens identified at the Clinic. Of these, the majority affected ornamental plantings. Aphids, spider mites, gall formers, leaf and needle miners and pear slugs were generally widespread. Isolated cases of spruce budworm infestations also occurred. Root maggots caused serious damage to cabbage, onion, and turnip crops in several parts of central Alberta. Insecticidal resistance was evident in a few fields and gardens. The prolonged wet weather favoured development of a high garden slug population which, damaged even carrots and potatoes, in addition to the usual damage to leafy vegetables. Root and crown borers continued to cause serious damage to older raspberry plantations in central Alberta. Larvae of the strawberry root weevil again caused serious reduction to conifer seedlings at the Oliver Tree Nursery. It was suspected that these larvae may also have been responsible for much of the previously undetermined spruce tree browning in scattered locations.

Diseases

A heavy outbreak of wheat stem rust, on susceptible varieties, occurred in an area bounded by Lloydminster, Vegreville and Bonnyville. Leaf rust of wheat was also prevalent, over a wider area. Various diseases causing head blight of wheat were common, and occurred most frequently on the new variety Park. The downy mildew-white rust complex of rape was widespread, and often severe, in central Alberta and Peace River regions. An unidentified root rot of rape was detected in several specimens examined at the Clinic. "White spot", a physiological disease of alfalfa, was encountered in specimens received from several scattered locations. A mineral deficiency was tentatively ascribed as the primary cause. A more spectacular deficiency disease, that caused by lack of available iron on high-lime soils, affected a wide range of fruits and ornamentals. In severe cases young Nursery stock were completely killed. Tests, using iron chelates, were made to determine most effective means of treatment and preventions. An outbreak of spruce needle rust affected wild and planted spruce in an area between Rocky Mountain House, Breton and Alder Flats. The worst outbreak, in years, of fireblight on crabapples, apples, and mountain ash began in early June and continued to spread in late September through central and southern Alberta. The Clinic made its first positive identification of the disease in the Peace River region. Septoria canker, a fungal disease of hybrid poplar, continued to be the most destructive disease of these trees in farm shelterbelts. The Clinic recommended discontinuing planting of susceptible hosts in the brown, black and grey-wooded soil zones.

Plant Identification

The majority of botany specimens handled were weeds and out-of-the-way plants sent in by weed inspectors and field supervisors. Bladder campion and scentless mayweed were particularly conspicuous in grain and newly seeded hay fields. A species of garden bluebell, and a **Glecoma** species have become established in some lawns and have resisted most efforts to eradicate them. The prolonged wet weather encouraged prolific mushroom growth, in some areas. False morels were particularly abundant in conifer woodlands north-east of Edmonton. Two persons were sickened, as a result of eating this inedible species. Timely press, radio and TV information was issued on inedible species of mushrooms.

Miscellaneous

An increase in the number of enquiries regarding snakes, frogs and skunks was noted. Skunks apparently have discovered summer resort cottages and camps to provide excellent food and shelter. Proper garbage disposal and exclusion practices are long over due in many such locations. Flour beetles and black carpet beetles continued to be received more frequently than any other household pests. Numerous telephone calls and letters were received dealing with a variety of pests or biological oddities. Each was given prompt attention, with the best information available.

Report of the Livestock Branch

1965

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J. J. KALLAL, Livestock Fieldman (Cattle)
L. BRINKHURST, Brand Recorder
J. BELZER, Livestock Investigator
H. M. LINK, Supervisor of Brand Inspection and Pounds

1965 has to rank as one of the best years on record for Alberta's livestock industry. Following a severe winter, early spring rains which interferred with seeding, produced exceptional grass, hay and feed grains in all parts of the province with the exception of the Peace River area. The cattle industry, faced with unprecedented numbers was blessed with a strong and steady price structure which resulted in a profitable year for cattle feeders and producers alike and continued to gain strength to the year end. Favorable price structure persisted in face of increased marketings over the previous year of roughly 18%. This was partially due to increased export demand that had not been present in the two previous years.

Hog marketings exceeded that of 1964 by roughly 6% with heaviest volume, relative to the previous year occuring during the first seven months. Prices increased steadily from an average of about $22.75 in January to an average of roughly $39.00 in December. The highest Edmonton price on record was established on December 17 when Grade A hogs sold at $40.05. The average price for the year was roughly $5.00 per hundred over the average for 1964.

Sheep producers were encouraged by a yearly average for slaughter lambs of about $2.00 per hundred over the previous year's average. However that total marketings of sheep and lambs was about 20% less than that of 1964.

CATTLE

Cattle were in poor to fair condition and feed supplies were low in many areas following the severe winter of 1964-65.

Spring calf losses were above normal.

Early spring pastures were poor, but late spring and summer pastures were excellent and cattle condition improved rapidly.

Cattle and calf population was estimated at 3,195,000 at June 1st, 1965, which was 1.9% more than June 1st, 1964.

Stock Inspections increased by 12% over those of 1964.

Brand Inspection Record of Live Cattle and Calf Shipments Out of Province

	1961	1962	1963	1964	1965
British Columbia	71,275	56,543	54,459	50,308	52,564
Saskatchewan	8,933	6,747	2,686	2,063	3,431
Manitoba	14,657	19,868	6,960	4,712	13,914
Ontario	98,727	81,587	70,015	80,130	89,618
Quebec	3,017	1,776	1,105	2,904	7,622
Nova Scotia	1,675	145	16	......	......
New Brunswick	......	632	340	63	204
United States	110,502	107,084	27,143	10,920	45,906
Newfoundland	......	......	......	40	......
Prince Edward Island	......	......	......	......	......
TOTAL	308,786	274,382	162,724	151,140	213,259

Purebred breeders sold 4,161 beef bulls through 38 contributor sales that were approved by the Department for application of Cattle Improvement Policy B. Sales were held at the following points: Grande Prairie, Olds (three), Calgary, Edmonton, Innisfail, Red Deer, Lethbridge (two), Camrose, St. Paul, Stettler, Vermilion, Fort Macleod, Mayerthorpe, Medicine Hat, Westlock, Cereal, Lloydminster, Brooks (four), High River (three), Lacombe, Drumheller, Empress, Didsbury, Hardisty, Athabasca, Coronation, Fairview, Rimbey, Taber and Sangudo.

Breed	No. Sold	Total Value	Average Price
Hereford	3,033	$1,443,850.00	$476.05
Aberdeen Angus	786	311,670.00	396.53
Shorthorn	342	124,110.00	362.90

Average Prices were lower on all breeds as compared to 1964 by sixty to one hundred dollars per head.

CATTLE IMPROVEMENT POLICIES

Bull Purchase Assistance

Policy A continued to operate on the basis of bulls being purchased by the Department as required to fill orders as received from eligible applicants.

There was no change in the operation of Policy B which applied to the 38 contributor sales listed above.

The following table shows the placement of bulls under Policy A and the numbers of bulls on which the bonus available was claimed under Policy B for the past five years.

Year	Policy "A"	Policy "B"
1961	1,961	1,686
1962	1,248	1,563
1963	67	1,477
1964	53	1,478
1965	23	1,624

Record of Performance Testing Program

This program was initiated in the fall of 1959 and the procedure through which it came into being can be found in the 1959 Annual Report.

An Annual Report of the Alberta section of the Federal-Provincial Beef Cattle Performance Testing Program is printed at the termination of each year's results in June. Copies can be obtained from the Livestock Branch.

The following table shows the extent of participation by purebred breeders in the last five years:

Year	No. of Herds	Male Calves Weighed	Female Calves Weighed	Total Calves Weighed
1961	60	1,112	1,015	2,127
1962	75	1,421	1,306	2,727
1963	90	1,584	1,502	3,086
1964	96	1,853	1,747	3,600
1965	117	2,246	2,148	4,394

In addition to the purebred herds, four members of the Alberta Beef Cattle Performance Association requested supervision of weights and approximately 1,950 head of commercial cattle were weighed.

The application of performance testing to livestock production was discussed at 22 meetings with an attendance of 931 people.

The Alberta Advisory Committee of Performance Testing met on February 4 in Calgary. The committee recommended that the Department proceed with plans to implement a progeny testing program as soon as feasible.

A pilot project was initiated which called for collecting 100 vials of semen, servicing 40 cows, and feeding for slaughter 10 steer progeny from each bull nominated.

Semen was collected from six bulls at the Vermilion College and stored for future use.

A policy to assist Municipalities and Counties to purchase portable livestock scales suitable for R.O.P. work was instituted. The Department contributes one-half the purchase cost to a maximum grant of $600.00 to any Municipality or County which purchases and makes the scales available to the livestock producers within its area. Assistance was granted on three scales.

Artificial Insemination

Reports completed in 1965 covering 1964 breedings show cow numbers inseminated by A.I. Units were down by 775 head compared to 1963. Including direct semen sales, 88,332 cows were serviced artificially in 1964 for an over-all increase of 1,056 cows. Greater interest is evidenced among cow-calf operators to inseminate their own herds. This has led to the development of the Stockman's A.I. Course; four such courses were conducted by the semen producing businesses for the first time in Alberta in 1965.

Cows Bred Artificially Through A.I. Units by Breed, 1959-1964

	1959	1960	1961	1962	1963	1964
Holstein	30,785	37,475	42,326	46,645	48,013	45,931
Ayrshire	2,396	2,934	3,051	3,060	2,669	2,625
Guernsey	1,325	1,840	2,122	2,188	2,213	2,058
Jersey	2,432	2,891	3,103	2,944	2,876	2,479
D.P. Shorthorn	1,703	1,901	2,120	2,049	1,887	1,561
Red Poll	260	254	252	361	126	146
Brown Swiss	15	186	847	1,270	2,022	2,469
Not Separated	......	......	......	......	......	169
TOTAL Dairy	38,916	47,481	53,821	58,517	59,806	57,438
Herefords	4,550	7,509	8,195	8,684	10,018	10,824
Angus	2,081	3,479	5,604	7,271	9,147	9,366
Shorthorn	1,171	1,544	2,652	2,074	2,110	1,970
Charolais	1,970	2,450	2,790	3,369	3,425	3,587
Other	46	86	81	512	270	212
Not Separated	......	......	......	......	......	604
*TOTAL Beef	9,824	15,068	19,322	21,910	24,970	26,563
Total Breedings	48,740	62,549	73,143	80,427	84,776	84,001
Percentage Female Breeding Population	4.5	5.7	6.4	6.9	7.2	6.9
No. of Herds	6,172	7,796	7,940	9,287	9,572	8,664

*Includes all cows of ALL BREEDS BRED to Beef Bulls.

Licences were issued for the operation of 38 Inseminating Businesses and 15 Branch offices. 125 (45 Class I and 80 Class II) licences were issued to technicians authorizing the Insemination of Domestic Animals and 10 licences were issued to Technicians authorizing the collection and initial processing of semen. Two Semen Producing Business Licences were granted, one at Calgary, and one at the Vermilion Agriculture and Vocational College.

The first post-diploma course in Animal Reproduction was carried out at the Vermilion Vocational Agricultural College with 10 students graduating. Three of these graduates became employed by the A.I. industry.

There were no new A.I. Inseminating Businesses established in 1965.

The principles of Sire evaluation have been discussed with Unit directors, managers, technician groups and farmer groups. Unit reports for the first 9 months of 1965 show 24,851 cows serviced to Holstein Sires. 8,014 of these services were to non-proven sires, 3,779 to sires with an effective daughter rating below —3; 2,157 to sires rated from —3 to 0; 6,198 from 0 to +3, and 4,703 over +3.

All bull semen used in Alberta came from one of three sources; the Ontario Association of Artificial Breeders, the B.C. Artificial Insemination Centre, and American Breeders Service. In 1964, 52,669 cows were serviced to Ontario semen, 26,809 to B.C.A.I. Semen and 8,069 to A.B.S. Semen. The average non return rate for the year was 71%, a 4 point increase from 1963. 24% of the cows were serviced to fresh semen and 76% to frozen semen.

53 meetings and short courses were attended with a total attendance of 1,256. Included were 12 annual A.I. Association meetings and 19 director's meetings. In addition, 10 committee meetings were attended including the Alberta Association of Artificial Breeders, Regulations Advisory Committee and A.I. Educational Advisory Committee.

Direct personal contact was made with 27 Alberta A.I. Units. Articles of information were circulated to A.I. Units, Technicians and District Agriculturists throughout the Province. Further publicity was given through press releases and radio broadcasts.

A survey was conducted on calf drop involving 25 farmers using A.I. on beef herds; 16 through the Bull Pound Community pasture and 9 privately. The Bull Pound program was carried out for 27 days with no repeats being serviced. The farmers contacted in this survey had 702 head in pasture, 576 were serviced artificially for a heat detection of 82%. 365 A.I. calves were dropped which is 55% of the total entered or 63% of the number serviced by A.I. After use of clean up bulls, 6% of the cows were dry.

Livestock Feeder Associations

Thirty-three feeder associations operated under the Feeder Associations Guarantee Act during the 1964-65 season. There were 1,033 active members who fed 44,459 cattle and 3,966 lambs, utilizing a credit of $4,199,846.77.

Twenty-one associations operated under annual guarantee and twelve associations operated under continuous guarantee.

Loans outstanding at August 31st under the continuous guarantee totalled $1,287,052.27.

1964-65 Feeder Association Operations:

Association	No. of Members	No. of Cattle	No. of Sheep	Credit $
Acme	32	1,309	......	133,065.68
Andrew-Willingdon	20	518	......	42,643.45
Barrhead	30	966	......	94,486.07
*Bashaw	56	2,163	......	210,889.82
Battle River	42	1,236	......	135,195.08
Big Valley	24	852	......	78,904.30
*Bowden	14	976	......	101,893.29
Bow Valley	74	3,577	1,628	230,795.68
Cardston	27	771	285	105,470.91
*Carstairs	33	1,938	......	200,979.39
*Central Alberta	87	4,656	1,394	476,927.16
Central Peace	17	607	......	57,880.28
*Delburne	16	861	......	81,840.09
Drumheller	14	540	......	55,047.90
East Olds	31	1,638	......	155,320.44
Glenwood	11	261	303	37,133.85
*Grande Prairie	60	2,329	......	200,990.61
Innisfail	18	834	......	98,137.16
Knee Hill Valley	28	1,448	......	173,407.59
*Little Bow	40	1,574	......	154,596.36
Mannville	11	233	......	18,059.01
Marwayne	30	971	......	83,177.65
Meadowbrook	19	996	......	92,291.40
North Peace	62	1,735	......	147,441.65
*Okotoks	31	1,338	......	132,696.63
*Parkland-Stavely	31	1,510	......	131,919.36
Ponoka	39	1,384	......	168,289.91
*Raven	31	1,371	......	127,914.65
Raymond-Magrath	13	471	......	41,995.15
*Red Deer	27	1,501	......	138,628.27
Taber	12	451	356	49,480.43
*Vegreville	8	265	......	30,728.12
Western	45	3,179	......	211,619.43
TOTAL	1,033	44,459	3,966	4,199,846.77

*Associations operating under continuous guarantee.

Summary of Feeder Association Operations covering the past five years:

Feeding Season	No. of Assoc.	No. of Members	Cattle	Sheep	Amount of Credit
1960-61	36	1,262	41,743	23,730	4,684,108.24
1961-62	38	889	28,246	10,884	3,130,628.90
1962-63	35	1,201	38,393	7,599	4,776,559.93
1963-64	36	1,492	51,382	5,067	5,854,345.80
1964-65	33	1,033	44,459	3,966	4,199,846.77

Dairy Heifer Calf Policy

This policy operated as in previous years with the Branch assembling and delivering 107 Holstein dairy calves to 16 different 4-H dairy clubs.

TORONTO ROYAL AGRICULTURAL WINTER FAIR

The 1965 Royal Agricultural Winter Fair was held November 12th to 20th. Alberta's livestock exhibit was down to 14 carloads as compared to 20 for the previous year due largely to new classifications in effect at the Royal which offer more prize money on a lesser number of classes for each breed. Bad harvest weather in September shifted a much heavier farm work load into October and resulted in a number of exhibitors cancelling their entries. The exhibit was shipped via C.P.R., loading in Edmonton November 3rd and Calgary November 4th.

The exhibit included 40 single steers, 2 carload lots of 12 steers, 6 groups of 5 steers, 50 beef breeding stock, 18 dairy cattle, 15 sheep, 6 hogs and 15 horses.

The Alberta Department of Agriculture received nominations, coordinated selection, assembled the shipment and provided feed and bedding from point of assembly until return. The arrangement whereby freight charges are borne 75% by the Canada Department of Agriculture and 25% by the Alberta Department of Agriculture continued in force. Selections were made by persons appointed by the various breed associations under the directions of the Livestock Board.

The following table summarizes the prizes won by Alberta exhibitors.

	Horses	Beef & D.P. Cattle	Market Cattle	Dairy Cattle	Sheep & Wool	Swine	Total
Grand Champion	......	1	......	......	......	......	1
Reserve Grand Champion	......	2	......	......	1	......	3
Champion	......	......	2	......	1	......	3
Reserve Champion	......	......	4	......	......	1	5
First Prize	2	5	7	1	1	1	17
Second Prize	5	3	4	1	1	3	17
Third Prize	2	4	2	......	3	......	11
Fourth Prize	1	2	3	......	4	1	11
Other Prizes	3	30	15	9	21	1	79
TOTAL	13	47	37	11	32	7	147

Outstanding Achievements:

L. M. Rye, Edmonton—best Canadian bred Clydesdale gelding

L. M. Rye, Edmonton—1st prize light draught Clydesdale team

Remitall Cattle Co., Olds—Reserve Grand Champion Shorthorn bull

Rothney Farms, Midnapore—Reserve Grand Champion Shorthorn female

Mrs. S. E. Atkinson & Son, Lacombe—Grand Champion Red Poll bull
John Wilson Jr., Innisfail—Champion Range Wool fleece
John Wilson Jr., Innisfail—Reserve Grand Champion fleece
Clarence Visser, Edmonton—Reserve Junior Champion Lacombe female
Byers Flour Mills, Camrose—Reserve Champion Shorthorn steer
G. R. & B. G. Powlesland, Del Bonita—Champion Hereford steer
McIntyre Ranching Co. Ltd., Lethbridge—Reserve Champion Hereford steer
McIntyre Ranching Co. Ltd., Lethbridge—Champion group of 5 steers
Byers Flour Mills, Camrose—Reserve Champion group of 5 steers
McIntyre Ranching Co. Ltd., Lethbridge—Champion carload steers
McIntyre Ranching Co. Ltd., Lethbridge—Reserve Champion carload steers

SHEEP

There was further reduction in sheep population. Several range flocks in southern Alberta were dispersed allegedly because of labor and grass shortage. Sheep population is gradually shifting to the northern and sub-marginal areas.

The average price of market lambs at Edmonton yards for choice and good grades was $21.45 compared to $19.33 in 1964. Prices increased from $18.25 in January and reached a high of $26.00 the week ending May 22nd; then declined to mid-September when prices again strengthened and remained at an average of $20.00 per cwt. for the balance of the year. Good slaughter ewes averaged $6.25 per cwt. compared to $5.65 last year.

Approximately 85% of the Alberta lambs marketed for slaughter graded choice and good. Federal stabilization price remained at $18.80 per cwt. basis national average. The Federal lamb carcass premium was continued at $2.00 per carcass on choice grade and $1.00 on good.

Feeder lambs were in keen demand. Prices ranged from $18.00 to $24.00 per cwt. Several carloads of feeders were purchased by eastern buyers; some were purchased by the U.S. feeders.

The annual sheep and lamb sales at Brooks and Cardston indicated extremely keen demand for breeding ewes and good, well developed ewe lambs. Over 1,500 breeding ewes of various ages were purchased by Quebec and Ontario sheepmen. Yearling ewes sold up to $32.00 per head, with an odd package of good Columbias selling to $37.00. The bulk of two-year-olds were selling at $22.00 to $25.00 per head. Good quality, ewe lambs were in keen demand by U.S. buyers at prices up to $27.00 per cwt.

Sheep exports to the U.S. totalled 13,326, mainly lambs.

The 1965 wool clip was down by approximately 14% from 1964. It is estimated that 181,000 sheep were shorn, averaging 8.9 pounds of wool or a total of 1,611,000 pounds compared to 196,000 head of sheep at 9.6 pounds, yielding a total of 1,882,000 pounds of wool in 1964. Reduction in average fleece weight follows reduction in numbers of range sheep. The Federal wool deficiency payment policy remained unchanged.

This office provided service in the culling and selection of commercial sheep flocks and in the selection of rams at the Calgary and Edmonton Sheep Sales. Several successful sheep field days were held. They included demonstrations in the selection of breeding stock, the demonstration of market lambs and the grading of lamb carcasses. A new approach to sheep management under pasture and partial zero grazing was dealt with at the various meetings. Two-day sheep shearing schools were held at each of the three Agricultural Colleges—Olds, Vermilion and Fairview.

A crossbreeding program was continued in a flock of ewes at the Fairview Agricultural & Vocational College. One group was bred to Hampshire rams and another to a Dorset Horn ram. Present evaluation is based on carcass grade, maturity and total weight of lamb produced per ewe. Wool yield and quality is also tested on a comparative basis for each crossbred ewe in this flock.

A Record of Performance program for sheep, applicable to both grade and purebred flocks was announced. Details of the program were arrived at from experience gained in R.O.P. work in institutional flocks in recent years. Under this program which is designed to identify superior producers in a flock, the Department provides guidance in collecting data and all necessary record forms.

Sheep Improvement Policies continued to operate on the same basis as last year. The following is the statistical data on the operation of Policies A and B, and the Livestock Listing Bureau:

	L.L.B.		Policy "A"	Bonus Policy	Total
Year	Ewes	Rams	Rams	"B" Rams	All Rams
1961	120	13	56	74	143
1962	......	3	30	45	78
1963	......	3	36	26	65
1964	......	3	34	35	72
1965	2	2	36	57	95

Composite Summary of Purebred Sheep Sales at Calgary and Edmonton

	1963		1964		1965	
Rams	No.	Av. Price	No.	Av. Price	No.	Av. Price
Suffolk	23	65.32	57	62.45	79	70.54
Hampshire	15	51.00	16	44.06	17	55.74
Border Cheviot	1	35.00	2	45.00	1	50.00
N.C. Cheviot	21	62.38	19	51.05	12	61.67
Corriedale	3	64.17	10	68.00	15	70.83
Southdown	3	43.16	4	47.50	2	65.00
Oxford	4	35.00	......	......	2	49.00
Columbia	3	72.50	......	......	......	......
Total & Average	73	58.79	108	56.53	128	67.20

	1963		1964		1965	
Ewes	No.	Av. Price	No.	Av. Price	No.	Av. Price
Suffolk	8	36.69	9	57.78	14	50.18
Hampshire	7	22.14	4	26.25	3	40.00
N.C. Cheviot	7	27.50	3	45.00	9	35.55
Corriedale	......	......	......	......	2	22.00
Oxford	3	22.75	2	20.00	3	25.00
Southdown	......	......	3	26.66	1	42.50
Total & Average	25	24.34	21	41.90	32	40.75

Average Comparative Price of "A" and "B" Grade Rams—Calgary and Edmonton Sales

Year	"A" Grade Rams Number	"A" Grade Rams Price Average	"B" Grade Rams Number	"B" Grade Rams Price Average
1961	79	60.04	61	45.20
1962	82	52.89	14	39.65
1963	42	64.94	31	50.46
1964	77	60.49	31	49.59
1965	83	70.58	45	59.00

Number and Value of Alberta Sheep and Lambs Sold at Inspected Plants

Year	Total No. Sold	Value Per Head	Total Sales Value
1962	197,232	14.94	$2,947,347.00
1963	166,952	16.07	2,684,057.00
1964	166,504	16.47	2,743,085.00
1965	138,302	18.62	2,575,183.00

Estimated Number of Sheep in Alberta at June 1st

1960	555,000
1961	554,000
1962	445,000
1963	424,000
1964	409,000
1965	355,000

SWINE

Nineteen Sixty-five was a banner year for pig producers. Price on the Edmonton market reached $40.05 per cwt. for carcasses on December 17th, the highest ever recorded in this province. Monthly average price on the Edmonton market varied widely. A low of $22.65 for the month of January was offset with an average of $39.10 in December. Average price for the year was $28.56 compared to $23.90 in 1964. The Federal deficiency floor price of $23.65 basis Toronto remained unchanged as did the $3.00 premium on Grade A carcasses.

Interest in pig production, though at a high level, was not as pronounced as was apparent during periods of previous high prices. Breeding stock was in demand but a ready market for cereal grains in conjunction with decreasing flexibility in hog operations because of increasing investment costs tended to level out production.

Prices paid for breeding stock was generally higher than in 1964. A late harvest contributed to lack of buyers at the Calgary fall sale and as a consequence many animals were passed but those with satisfactory R.O.P. records sold. Later sales were well attended and here again animals with desirable phenotype and R.O.P. scores sold above the average.

The Alberta Healthy Herd Program was altered to a Minimal Disease Program with essentially the same standards. Interest in S.P.F. was no greater than a year earlier and there were reports of operators entering into contracts with an organization known as the American Hog Company. Connaught Medical Research Laboratories, Toronto, were still distributing some stock in the province.

Throughout the year work continued that was designed to improve the quality of Canadian pork. The Livestock Commissioner attended three conferences in Ottawa; the National Meeting on Elite Herd Policy for Swine; the C.F.A. Conference on Hog Grading and Record of Performance Testing; and the National Advisory Board on Record of Performance for Swine. Out of these meetings came an entirely new concept of carcass appraisal for the national R.O.P. program which replaced the system that had been in effect without major revision for over thirty years. Evaluation of carcasses on R.O.P. test was changed to a predicted yield of lean cuts, from the previous arbitrary point system based on length, back fat, belly and loin area. Other revisions dealt with litter size, sex distribution, abnormalities and breed disqualifications. The Alberta R.O.P. Committee was instrumental in drafting the major amendments adopted by the National Committee. The discussions at Ottawa were followed by the drafting and announcement of a joint Federal-Provincial "Probe-weight" home test program for swine, instituted in Alberta and administered by this Department as a pilot project to a probable national approach to the evaluation of fat distribution in live animals.

Following study by a sub-committee of the Alberta R.O.P. Committee, and recommendation by the committee to proceed, this Branch worked out a cooperative program with the Federal Livestock Division and the S.P.F. Association whereby the new test station at Lacombe was reserved for animals of S.P.F. origin for the first three months of operation. A study was designed where pigs from S.P.F. breeders were randomly allotted to the new station and to the existing facility in Edmonton, the only deviation from normal R.O.P. test being that of the four pigs tested from each litter entered, two were tested at Lacombe, the remaining two in Edmonton. This Branch provided the service to make assembly of test groups possible. A total of 128 pigs (32 litters) were evaluated from nine breeders. At year end all data was gathered but processing had not been completed.

The Livestock Commissioner continued to act as Chairman of the Alberta R.O.P. Committee. The committee's efforts over several years toward provision of test station space in Alberta commensurate with the swine industry was rewarded by the opening of a new test station at Lacombe in June. Following completion of the S.P.F. test in that station in October, the station was filled to practical capacity with regular test litters by year end.

During the period April 1st, 1964 to March 31, 1965, 53 breeders tested 156 litters (sows); 105 Yorkshire, 49 Lacombe and 2 Landrace. An additional 34 litters, 15 Yorkshire and 19 Lacombe were home tested by breeders.

The provincial policies pertaining to swine continued essentially on the same basis as in 1964. Minor revision of the policies pertaining to R.O.P. was necessary because of the change in scoring under the new carcass appraisal system which was applied to all litters born in 1965.

Price Average Covering all Alberta Sales (including R.O.P.)

Breed	Boars				Sows			
	1964		1965		1964		1965	
	No.	Av. Price	No.	Av. Price	No.	Av. Price	No.	Av. Price
Yorkshire	517	101.64	424	115.29	703	101.52	523	99.61
Tamworth	12	95.42	16	106.10	2	80.00	7	89.93
Landrace	2	92.50	5	62.51*	9	92.78	14	63.04
Lacombe	64	111.60	56	140.56	75	101.23	81	107.07
Total & Av.	595	102.55	501	117.29	788	101.37	625	99.58

*No Landrace sold at any of the 1965 Fall Sales when prices for breeding stock were high.

Average Price for all Swine Breeds at Calgary and Edmonton Sales

	1964		1965	
	No.	Av. Price	No.	Av. Price
Boars	305	111.89	258	124.27
Sows	476	110.43	367	98.46

Average Price of Lacombe Breed Special Sale

	1964		1965	
	No.	Av. Price	No.	Av. Price
Lacombe sows	14	77.32	25	112.40
Lacombe boars	17	109.71	14	146.96

Average Price at Camrose R.O.P. Swine Sale

Breed	Boars				Sows			
	1964		1965		1964		1965	
	No.	Av. Price	No.	Av. Price	No.	Av. Price	No.	Av. Price
Yorkshire	36	107.29	35	123.71	18	105.00	33	100.99
Lacombe	10	114.75	7	95.71	5	101.50	6	95.00
Total & Av.	46	108.91	42	119.04	23	104.24	39	100.07

Swine Placed Under Livestock Listing Bureau and Improvement Policies "A" and "B"

Year	L.L.B.		Policy "A"	Policy "B"
	Gilts	Boars	Boars	Boars
1961	10	24	186	376
1962	7	22	162	341
1963	13	25	106	373
1964	4	7	93	405
1965	39	19	94*	332

*This total includes 67 Yorkshires, 21 Lacombes, 2 Tamworth and 4 Landrace.

Record of Performance Sow Bonus Policy

Number of sows qualifying for bonus:

Breed	1961	1962	1963	1964	1965
Yorkshire	22	20	33	54	54
Landrace	......	......	1	......	......
Lacombe	20	13	22	18	26
Total	42	33	56	72	80

Alberta Hog Gradings for Years 1961 to 1965

Grade	1961	1962	1963	1964*	1965*
	%	%	%	%	%
A	27.40	33.10	35.10	36.30	40.30
B	45.40	43.10	42.90	45.20	43.00
C	11.60	8.10	7.40	8.20	7.10
Light	2.80	3.40	2.60	2.80	3.20
D	0.90	1.10	0.70	0.70	0.80
Heavy	3.90	3.60	4.40	4.30	3.50
Extra Heavy	1.70	1.60	1.80	1.90	1.50
Injured	......	......	......	......	......
Ridgling	0.50	0.50	0.60	0.60	0.60
Stags	0.60	0.60	0.40	0.50	0.45
Sows	5.00	4.70	4.10	4.70	4.20

*1964 and 1965 grading percentages exclude stags and sows.

Number and Value of Inspected Slaughter Hogs of Alberta Origin

Year	Total Number	Value per Pig	Total Sale Value
1961	1,659,909	38.89	64,537,262.00
1962	1,674,177	39.80	68,611,312.00
1963	1,350,490	41.22	55,667,363.00
1964	1,554,404	37.52	58,321,238.00
1965	1,634,390	44.44	72,635,358.00

Estimated Number of Swine on Alberta Farms at June 1, 1961 to 1965 incl.

1961	1,540,000
1962	1,200,000
1963	1,165,000
1964	1,370,000
1965	1,245,000

HORSES

The population of horses on Alberta farms at June 1st was estimated at 92,000 head. This represented a decrease of 4.2% from the previous year. The number of horses sold through Auction Markets was reduced about 35% from the previous year. Horses traded through all markets and on export totalled about 17,500.

Active interest was maintained in the breeding of light horses. The demand for good quality, well broken horses of heavy type far exceeded the supply. The specialized demand for pregnant mares for shipment to Eastern Canada for urine collection was met only to limited extent.

The bulk of horse marketing and establishment of values was largely based on meat horse trade.

RECORDING OF BRANDS

Summary of Brand registrations, transfers, renewals and cancellations:

	Cattle	Horses	Sheep	Poultry	Fur Bearing	Total
New Brands Issued	1,598	119	2	......	......	1,719
Transfers Registered	361	25	......	......	......	386
Certified Extracts Issued	2	......	......	......	......	2
Brands Renewed	6,151	745	5	......	1	6,901
Brands Cancelled	250	44	......	......	......	294
Brands Reissued	40	5	......	......	......	45
Total	8,402	938	7	......	1	9,347

The number of brands in good standing at December 31, 1965:

Cattle	35,767
Horses	4,139
Sheep	23
Poultry	5
Fur Bearing	2
Total	39,936

There was a total of 2,429 letters written during the year, which dealt with the new applications, transfers, unregistered brands and other items pertaining to the work carried on in the Brand Office.

ALBERTA LIVESTOCK AND LIVESTOCK PRODUCTS ACT

Stockyards and Stockyard Licensing

Three hundred and fifty-six stockyard licences were issued in 1965, compared to three hundred and forty-eight in 1964.

Six licences were altered due to change in ownership, reclassification or discontinuance, resulting in three hundred and fifty stockyards being in operation at the end of 1965.

The following table shows licences issued by classes:

Class	B	C	D	E	F	G	=	Total
Number	17	38	58	2	4	236		356

A total of 52 Class "D" Stockyards were in operation at December 31st, 1965.

The following table shows the number of livestock sold at Class "D" Stockyards (Auction Markets) for each of the past five years:

	1961	1962	1963	1964	1965
Cattle & Calves	350,020	396,800	424,551	470,330	**514,327**
Hogs	303,416	271,754	293,779	434,328	**364,807**
Sheep	32,224	41,919	31,797	30,336	**32,470**
Horses	8,200	10,935	9,729	11,505	**7,597**

Class "E" and "F" Stockyards operated at Lundbreck, Pakowki Park Bend, Walsh, Lea Park and Empress handled 19,852 head of cattle in 1965, compared to 28,848 in 1964. However, Pincher Creek was reclassified from an "E" to a class "D" Stockyard resulting in the lower figure for 1965.

Livestock Dealers and Dealer's Agents

No changes were made in the Livestock Dealer's regulations in 1965. It was not necessary to recall the proceeds from any bonds.

Dealers and Agents totalled 884 in 1965, compared to 891 in 1964, a decrease of 7.

There were 7 prosecutions and one dismissal and a number of warnings issued for dealing without a licence.

Stockyards were visited whenever possible and a number of trade practice investigations were conducted as a result of complaints from producers, market operators and shippers of livestock.

THE STOCK INSPECTION ACT

Brand Inspection was applied to two new points at Stony Plain and Stavely, making a total of 72 regular points of inspection. Numerous inspections were also conducted at feedlots and loading points, mainly on export shipments.

For the first time in the Province's history total inspections exceeded two million head. The total was 2,116,844 head, made up of 1,801,199 inspections through all markets and on export, and 315,635 head returning from market centres to feedlots and pastures.

Inspectors held up proceeds of sale, or actual animals, for a total of 5,159 head, for further investigation of rightful ownership. The proceeds of sale covering 201 head were forwarded to the Branch headquarters for further investigation required beyond the time allowable at inspection points. Of the total detentions 187 head of live cattle, and proceeds from the sale of 237 head were returned to rightful owners other than the shipper. The total of 424 cattle that were detected as illegally shipped constituted 8.2% of all cattle detained for further investigation.

Two hundred and seventeen butchers and hide dealers were licensed. Most butchers were visited at least once and their records of slaughterings checked and discussed with them.

THE HORNED CATTLE PURCHASES ACT

Many thousands of horned calves continued coming to market thereby perpetuating the horn problem for second owners. The province-wide percentage of cattle marketed with horns increased from 8.3% in 1964 to 10.2%. Horn percentages were particularly high during June, July and August, running from 3 to 4 percent higher at various markets than for corresponding months during the previous 4 years. This is believed due to a cold wet spring and extremely severe weather the preceding fall, which prevented second owners from conducting normal dehorning of 1964 calves.

The following table shows the percentage of cattle with horns at the main market centres for the past four years with a base point of 1949.

	1949	1962	1963	1964	1965
Edmonton	19.9	11.0	11.2	10.9	14.4
Calgary	15.6	6.5	5.9	5.6	7.0
Lethbridge	......	5.8	7.3	5.4	7.0
Medicine Hat	......	3.1	3.5	4.5	4.1

IMPROVEMENT DISTRICTS STRAY ANIMALS ACT

Five new pound districts were organized in Improvement Districts, bringing the total number in those areas to 154.

The administration of pound matters in counties and municipalities was transferred from the Department of Municipal Affairs to the Department of Agriculture in May.

GENERAL

The Branch co-operated closely with the Extension Branch in developing a co-ordinated livestock extension program. In addition to administration of policies and programs Branch personnel serviced numerous extension meetings, short courses, field days, demonstrations, schools, livestock shows, etc. and acted on a number of Boards and Committees serving the livestock industry.

The Livestock Commissioner acted as chairman of the Alberta Livestock Board; the Alberta R.O.P. Swine Committee; the Alberta Beef Cattle Performance Testing Advisory Committee and the Alberta Artificial Insemination Advisory Committee. He also represented the Department on the Meat Industry Coordinating Committee; the National R.O.P. Swine Board and the National R.O.P. Beef Cattle Committee.

Following is a summary of official duties conducted by Branch personnel:

Farm Visits	Meetings and Short Courses	Livestock Judging Assignments	Culling and/or Purchasing at Sales	Stockyard Visits	Radio and TV Appearances	"Farm Notes" Articles
933	317	51	69	578	25	28

Due to emergency in Feed Test recommendations Mr. Reddon assumed this duty and processed 51 analysis with recommendations.

Numerous changes took place in the brand inspection staff. Mr. Thos. J. Crosbie reached retirement age on January 14th, after about 14 years service.

Mr. R. A. Sewall was transferred from Edmonton to Calgary. Messrs. A. Galarneau, E. Court, R. Bouck and B. Flewelling left the service by resignation. New appointments to staff included W. Benton; A. Jans; B. Welch; R. Blakely; T. Hall; R. Evenson and P. Enns. Mr. Benton's appointment followed establishment of a full time inspection office at Brooks. Three deputy inspectors appointed were, W. Fielhaber, J. Brodie and W. Stafford.

Mr. R. S. Smith resigned from the position of Brand Recorder. Mr. L. Brinkhurst was appointed to that position.

ACKNOWLEDGEMENTS

The Branch continued to enjoy the support and co-operation of the various livestock interests including breed associations, all segments of the trade, exhibition and sale associations. Also the support of the R.C.M. Police in matters of investigation and enforcement. The co-operation of other Branches and Departments of the Government and of the Federal Production and Marketing Services was extremely helpful. All assistance and co-operation from these agencies was much appreciated and is hereby acknowledged.

Report of the Dairy Branch

D. H. McCALLUM, B.S.A., P.Ag., Dairy Commissioner
R.P. DIXON, B.Sc., P.Ag., Assistant Dairy Commissioner
G. A. MacALLISTER, B.Sc., P.Ag., Supervisor, Dairy Plant Inspection
A. A. HUGHES, B.Sc. (AGR.), P.Ag., Dairy Production Specialist
V. W. KADIS, Ph.D., Director, Dairy Laboratory
L. H. ARNOLD, Supervisor, Frozen Food Plants
W. A. McGRATH, Charge of Dairy Statistics

District Dairy Specialists

Calgary City	W. E. Duncan, B.Sc.	Edmonton N.W.	E. W. McLeod, B.S.A.
Calgary Rural	L. C. Montgomery	Fairview	K. J. MacDonald, B.S.A.
Camrose	J. D. Rasmussen	Lethbridge	A. O. Aspeslet
Edmonton City	K. S. Anderson	Red Deer	S. S. Paulsen
Edmonton S.W.	J. R. Findlay, B.Sc.	Vermilion	H. L. Beckett
Edmonton East	D. J. Prince		

GENERAL REVIEW

Milk production during 1965 totalled 1,641,221,000 pounds; a decrease of 4.5% as compared to 1964. This decrease was primarily due to fewer cows being milked. The June 1st census figure reported 262,000 cows in milk; a drop of 12,000 cows from 1964, and the lowest number reported since 1916. Pasture conditions during the grazing season were above average throughout most of the province. Late summer rains and wet weather delayed harvesting causing losses in hay quality and preventing the usual practice of grazing aftermath. The average milk production per cow of 6,264 pounds was approximately the same as the previous year. This contrasts with the average production of 10,665 pounds of milk given by the 18,838 cows on the Cow Testing Service. The decrease in total milk production of 78,204,000 pounds resulted in a decrease of approximately 1¾ ($1,715,000) million dollars in the estimated farm value of milk production which totalled $51,271,000.

Commencing April 1st, the Federal Dairy Policy was revised with the intent of realizing a national average price of $3.50 per cwt. for producers of manufacturing milk. This objective was to be accomplished in two stages—first, by means of subsidies, price supports and deficiency payments an initial price of $3.30 per cwt. could be maintained as an average price; second, supplemental payments depending on the size of producer operations could amount to an additional 20 cents per cwt. on the average. The Agricultural Stabilization Board continued to support butter on the basis of 64 cents per pound to the producers. This was accomplished by means of a subsidy of 10.9 cents per pound butterfat (a reduction of 2.4 cents from the previous year), which resulted in an increase of 2 cents in creamery butter. On May 1st, the 3.6 cents subsidy on Canada First Grade Cheese was dropped, but after a 60 day aging period the market advanced to a point which returned approximately the same price to cheese manufacturers as was paid in the previous year.

The estimated plant value of manufactured or processed products amounted to $59,437,000. This represents a new high value and an increase of $1,089,000 over the previous year. The increased value was due to increased ice cream and fluid milk sales. Ice cream reached an all time high of 5,246,000 gallons; up 16.2%

over 1964. Fluid milk and cream consumption was up 4.4% and 1.7% respectively. Butter production was down over 8% and cheddar cheese 10.3%. There was an increase in the percentage of the total milk utilized for fluid sales, ice cream, and fed to farm animals; whereas lower percentages were utilized in the manufacture of creamery butter and cheddar cheese. More than half (52.1%) of the total milk was utilized for the manufacture of creamery butter. The farm value of this butterfat amounted to almost 20 million dollars.

The quality of creamery butter as evidenced by the grading reports from the Canada Department of Agriculture was well maintained with over 96% being classified as Canada First Grade.

Effective July 5, 1965, the Regulations under The Dairymen's Act pertaining to Alberta Cream Grade Standards were revised. The "Off Grade" designation was replaced by the classification of "Reject" cream. A revision was also made in the price differentials for the purchase of cream whereby every dairy manufacturing plant was required to increase the premium from 2 cents to 4 cents for special grade over first grade.

On May 15, 1965, Mr. R. P. Dixon, Supervisor of Dairy Cattle Improvement, returned to his duties following completion of post-graduate studies at the University of Alberta. Upon the appointment of Mr. D. H. McCallum, Dairy Commissioner, on July 1st, 1965, as Chairman of the Agricultural Products Marketing Council, Mr. Dixon was appointed Assistant Dairy Commissioner, and assumed the responsibility of the administrative duties of the Dairy Branch.

ESTIMATED FARM VALUE OF ALBERTA MILK PRODUCTION 1965

The quantity, price, value and utilization of milk production during 1965 is reported in the following table. To indicate changes from the previous year, the 1964 figures have been included.

	Year	Pounds	Milk Equivalent Pounds	% Total Milk	Price	Value
Butterfat for Creamery Butter	1965	29,615,000	855,551,000	52.1	.668 per lb.**	$19,793,000
	1964	32,253,000	931,741,000	54.2	.669 per lb.**	21,576,000
Farm Dairy Butter	1965	1,139,000	26,653,000	1.6	.56 per lb.	638,000
	1964	1,438,000	33,649,000	2.0	.56 per lb.	805,000
Milk and Butterfat for Ice Cream (milk basis)*	1965		31,789,000	2.0	2.87 per 100 lbs.	913,000
	1964		26,473,000	1.5	2.83 per 100 lbs.	749,000
Milk for Cheesemaking and Concentrating	1965		128,581,000	7.8	2.81 per 100 lbs.	3,617,000
	1964		136,074,000	7.9	2.80 per 100 lbs.	3,810,000
Fluid Milk Sales	1965		290,879,000	17.7	4.83 per 100 lbs.	14,055,000
	1964		278,542,000	16.2	4.78 per 100 lbs.	13,322,000
Cream Fluid Sales (milk basis)	1965		70,498,000	4.3	2.85 per 100 lbs.	2,012,000
	1964		69,326,000	4.0	2.82 per 100 lbs.	1,957,000
Milk Farm Home Consumed	1965		142,900,000	8.7	2.77 per 100 lbs.	3,958,000
	1964		153,400,000	8.9	2.77 per 100 lbs.	4,249,000
Fed Farm Animals	1965		94,370,000	5.8	2.77 per 100 lbs.	2,614,000
	1964		90,220,000	5.3	2.77 per 100 lbs.	2,499,000
Kept on Farms, Skimmilk from Creamery Butter and Skimmilk and Buttermilk from Dairy Butter	1965	764,783,000			.48 per 100 lbs.	3,671,000
	1964	837,327,000			.48 per 100 lbs.	4,019,000
Total	1965		1,641,221,000	100.0		51,271,000
	1964		1,719,425,000	100.0		52,986,000

*Does not include butterfat from creamery butter used in the manufacture of ice cream.

**Includes government subsidy, but not supplemental payment.

ESTIMATED PRODUCTION AND VALUE OF FACTORY DAIRY PRODUCTS

The following table shows the quantity, price and value of dairy products manufactured or processed in Alberta dairy manufacturing plants during 1965 with corresponding figures for 1964 added for sake of comparison.

	Year	Quantity	Price	Value
Creamery Butter, lbs.	1965	36,562,000	$ .5493 per lb.	$20,084,000
	1964	39,818,000	.5143 per lb.	20,478,000
Cheddar Cheese, lbs. (including net increase in processing)	1965	2,188,000	.4213 per lb.	922,000
	1964	2,438,000	.3831 per lb.	934,000
Ice Cream, gallons*	1965	5,246,000	1.45 per gallon	7,607,000
	1964	4,515,000	1.45 per gallon	6,547,000
Fluid Milk Sales, lbs. (including processing charges)	1965	290,879,000	6.49 per 100 lbs.	18,878,000
	1964	278,542,000	6.44 per 100 lbs.	17,938,000
Cream as Milk, lbs. (including processing charges)	1965	70,498,000	4.51 per 100 lbs.	3,179,000
	1964	69,326,000	4.48 per 100 lbs.	3,106,000
Skimmilk and Buttermilk Sales for Human Consumption (including processing charges)	1965	23,377,000	3.83 per 100 lbs.	895,000
	1964	23,616,000	3.79 per 100 lbs.	895,000
Skimmilk, buttermilk, lbs.	1965	44,240,000	.48 per 100 lbs.	212,000
	1964	44,753,000	.48 per 100 lbs.	215,000
Whey, lbs.	1965	18,581,000	.24 per 100 lbs.	45,000
	1964	20,797,000	.24 per 100 lbs.	50,000
Miscellaneous Manufactured Products**	1965			7,615,000
	1964			8,185,000
Total	1965			59,437,000
	1964			58,348,000

*Includes hard and soft ice cream.

**Includes concentrated milk products, cottage cheese, whey butter, cheese other than cheddar and yoghurt.

BRANCH EXTENSION ACTIVITIES

Representatives of the Branch attended and addressed meetings on dairy production, feeding and management, processing and manufacturing of dairy products, and the processing and storage of frozen foods. Considerable time was spent by branch personnel attending committee and board meetings concerned with the dairy and frozen food industries. Branch staff gave assistance to 4-H dairy club activities and achievement days, fairs and special promotional activities such as the Dairy Princess Competition held in conjunction with Edmonton Klondike Days and the Calgary Exhibition and Stampede.

The Dairy Branch continues to distribute monthly newsletters, circulars and bulletins. In 1965, the bulletin entitled, "Better Cream Means Better Butter" was compiled for distribution through the Agricultural Extension Service. Branch personnel prepared extension material for the press, radio and TV media as well as making personal appearances. On May 27th and 28th, a dairy fieldman's course was conducted at the University of Alberta farm pavilion, with dairy supply firms furnishing the necessary equipment. Seventy persons attended the course which was sponsored jointly by the Dairy Branch and the Department of Dairy and Food Science at the University. Speakers from the Departments of Agriculture and Health, the University of Alberta, and representatives of several national companies provided information for the course on such related subjects as cleaning and sanitizing compounds, water supplies, sanitation methods, etc.

Examinations were held throughout the year so that candidates could qualify as licensed graders and testers of dairy products. Similar examinations were held for bulk milk collectors. In June, refresher courses were held for bulk milk collectors at Lethbridge and Calgary under the direction of the Dairy Branch Staff.

Official weight certificates covering a total of 9,110 boxes and representing 3,841,994 pounds of creamery butter were issued to Alberta manufacturers supplying butter to the Agricultural Stabilization Board.

DAIRY PLANT INSPECTION AND INSTRUCTION

Dairy Plant Changes

A total of 109 licensed dairy manufacturing plants operated during the year. The majority of the plants operated as butter manufacturing plants or as combined butter and fluid milk processing operations.

On April 12, 1965, Palm Dairies Limited, assumed the operation of Model Dairies Limited, Calgary, as a branch of the parent organization. On May 1st, Palm Dairies Limited, Edmonton, moved the fluid milk operation into newly-renovated quarters in South Edmonton.

An early morning fire on May 6th damaged the Silani Sweet Cheese Company plant at Airdrie and the operation was not resumed.

The Viking branch of the Northern Alberta Dairy Pool discontinued processing fluid milk and the area was supplied from the Sedgewick plant.

On July 5, 1965, the Northern Alberta Dairy Pool assumed operation of Valley Dairies Limited with plants located at Athabasca, Evansburg, Lac La Biche and Sangudo.

During June, Jasper Dairy Company Limited, Edmonton, commenced building a new plant which was officially opened November 24, 1965.

In late October, Northern Alberta Dairy Pool commenced the construction of a new cheese factory at Thorsby and it is anticipated that it will be in operation early in 1966.

In December, a producer-distributor fluid milk operation was commenced at Holden for distributing an homogenized 2% Guernsey milk.

Inspection and Instruction

During 1965, Donald J. Christiansen transferred from the Dairy Branch to the Extension Branch of the Department of Agriculture. In November, Earl W. McLeod was appointed as his successor to headquarters staff covering the area from Edmonton west to Edson.

A total of 1,323 plant inspections were carried out by the field staff at operating plants. Official check tests were made on 27,136 shipments of milk and cream for butterfat. In addition, 79,939 lots of churning cream were check graded. Adjustments on grading and testing variations were made on 1.86% of the samples officially checked. Periodic check tests on the moisture content of butter numbered 160 during the year.

Bulk Milk Handling

The trend to the bulk method of handling both fluid and manufacturing milk from farms to processing plants continued in 1965. During the year, the fluid milk operations of Independent Creameries Limited at Innisfail and the Central Alberta Dairy Pool at Brooks were converted entirely to bulk handling. A considerable number of shippers to the powder plant at Camrose and to the Red Deer condensery converted to the bulk method.

Dairy Branch personnel throughout the province continue to check farm bulk tanks at the time of the original installation and calibration. Rechecking of bulk tanks was carried out upon special request of either the producer or the dairy purchasing the milk.

A total of 51 bulk transport trucks operated in the province, and during the year loads of milk were check weighed giving a check on the weights as determined from the dip stick readings made by licensed bulk tank graders at the dairy farms.

Quality Control and Competitions

Continued interest in the production of quality dairy products was maintained throughout the year. The Quality Control Advisory Committee of the Alberta Dairymen's Association studied specific matters pertaining to milk quality. The Food and Drug Directorate continue to make spot checks on the bacteriological quality and sediment of milk received at cheese factories, condenseries and powder plants. To assist producers in meeting the Food and Drug standards of quality, the Dairy Branch field staff expanded their activities of farm visits and attendance at producer meetings in an effort to improve milk quality at the farm level.

Exhibits of Alberta butter at leading Canadian exhibitions won a fair share of the awards in the various butter classes. Out of a total of 109 entries sent to the two principal exhibitions, i.e., the Canadian National and Toronto Royal, Alberta entries won seven firsts, ninety-three seconds and nine third prize awards.

At the Royal, the Northern Alberta Dairy Pool Limited, Wetaskiwin, and the Central Alberta Dairy Pool, Ponoka, won aggregate awards in the sections for highest flavor score and best finished exhibits respectively.

The annual competitions, based on the commercial grading of cheese and butter throughout the year, were conducted by the branch. On four occasions at both Edmonton and Calgary, scoring panels under the supervision of local dairy specialists were conducted for ice cream and cottage cheese. To encourage good housekeeping in the dairy industry, all plants in the province were scored by branch personnel. The top plants were then rescored by headquarters staff and winners determined. A total of 46 plants scored 80% or more and qualified for a merit certificate.

Licenses

Licenses for 1965, with corresponding figures for 1964, are listed below:

	1965	1964
Milk and Cream Testers Form "A"	274	266
Cream Graders Form "B(C)"	210	214
Plant Milk Graders Form "B(M)"	153	153
Tank Milk Graders Form "B(M)"	123	119
*Dairy Manufacturing Plant Form "C"	115	115

*Due to change in ownership, six duplicate licenses were issued during the year 1965.

Margarine and Imitation Dairy Products

During the year, random samples of margarine from all manufacturers were collected at retail stores and subjected to composition and color analyses by branch personnel.

Reports indicated that all samples complied with the composition standards, while a few samples violated the color requirements. Margarine was examined at the retail level for packaging and labelling. Cartons were also submitted by manufacturers for ministerial approval, and were notified as to compliance or non-compliance. Retail outlets were also checked periodically for imitation products that could be in contravention of The Dairymen's Act.

DAIRY CATTLE IMPROVEMENT SERVICE

Division Activities

1. The principal activity of this division during 1965 was the Cow Testing Service, highlighted by the extension of the Route Plan Program of cow testing to the Calgary area.

2. Field work of the section was limited due to increased administrative responsibilities of personnel within the branch. Visits to testing centres, correspondence and record analysis studies were carried out.

3. Extension activities included dairy field days, judging dairy cattle at 4-H shows and exhibitions, Dairy Princess Competition and the Edmonton Grassland Improvement Competition. There was considerable interest in automatic metering and sampling devices used to determine the level of production of individual cows for herd testing programs as well as in the free-stall system of housing dairy cattle.

4. Early in the year, cow testing workshops were held in Leduc, Rocky Mountain House, Calgary, Lethbridge and Camrose where herd owners were assisted in analyzing their cow testing records. This division also co-operated with other branches in offering dairy production schools and short course meetings throughout the province.

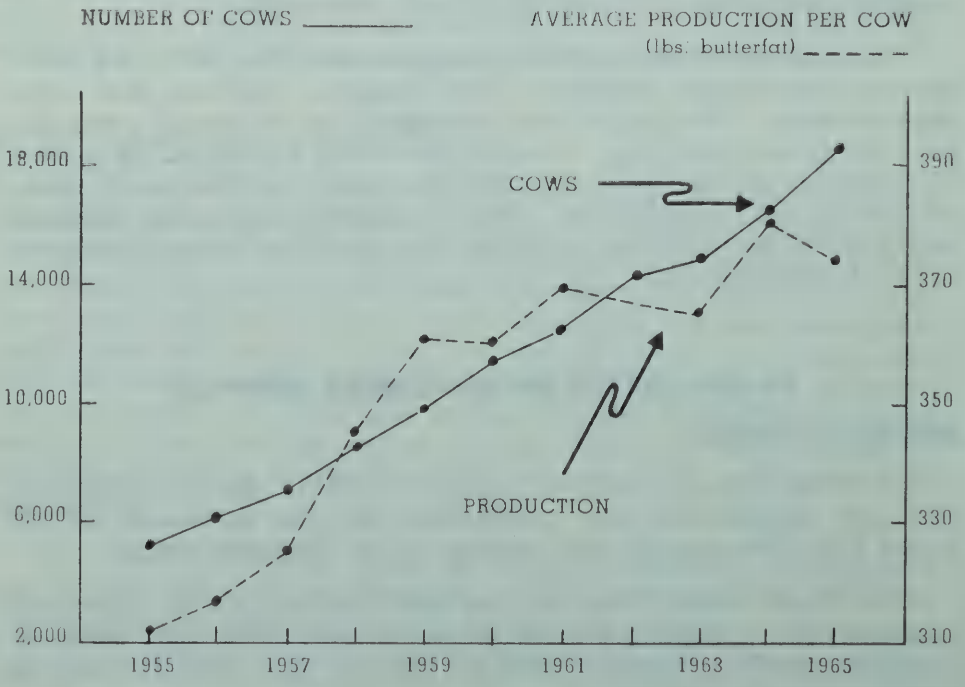
Cow Testing

A total of 18,838 cows tested with an average production of 10,665 pounds of milk and 376.0 pounds of butterfat, highlighted the Cow Testing Service for 1965.

The 539 herds under test in 1965 represented a net increase of 1,834 cows and 15 herds over 1964.

During 1965, a total of 67 new herds and 2,642 cows were placed under test, while 1,272 cows in 52 herds discontinued.

To illustrate the substantial growth of the Cow Testing Service and the level of production per cow during the past 10 years, the following graph is submitted.



(a) Mail Order

This was the basic program offered to 363 herd owners throughout the province. Monthly milk samples were lifted by the herd owners from individual cows and forwarded to one of the testing centres for testing by Dairy Branch officials. Two plans of cow testing were offered to herd owners. Milk from each cow was either weighed daily (Plan I) or weighed on one day a month (Plan II) by the herd owners.

The following table shows the number of herds and cows tested under the mail order system during the past three years.

	1963	1964	1965*
Number of Herds	377	395	363
Number of Cows	10,188	11,191	10,203

*Calgary Route Plan Program transfers not included.

From the above table, it can be seen that there was a decline in both the number of herds and the number of cows under this program during 1965. A total of 18 herds testing 865 cows on the Mail Order Program at Calgary transferred to the Route Plan Program. Compared to 1964, the actual decline was 14 herds and 323 cows.

(b) Owner-Sampler Route Plan

On June 1, 1965, a Calgary Route Plan Program similar to that in operation at Edmonton was initiated, with the appointment of Mr. H. Loewen as full-time fieldman.

Under this program, farms under test in the Edmonton and Calgary areas are visited monthly, and milk samples lifted by the herd owners are collected. Heifer calf identification and ear tagging is carried out at the time of the monthly visits by the fieldmen.

The following table shows the number of herds and cows tested under the Owner-Sampler Route Plan system during the past three years.

	1963	1964	1965*	
	Edmonton		Edmonton	Calgary
Number of Herds	119	129	134	42
Number of Cows	5,145	5,813	6,328	2,194

*Calgary Route Plan Program inaugurated June 1, 1965.

In the Edmonton area, a total of 5 more herds and 515 more cows were tested under the Owner-Sampler Route Plan during 1965 than in 1964. The fieldman made 1,525 farm visits, ear-tagged 1,494 heifer calves and maintained calf record books for 119 herd owners during 1965.

A total of 14 new herds and 609 cows enrolled in the Edmonton Route Plan in 1965, while 9 herds with 255 cows discontinued the program.

Of the 42 herds and 2,194 cows on the Calgary Route Plan Program, 18 herds and 865 cows were transfers from the Mail

Order Program. This Route Plan was responsible for the enrollment of 24 new herds and 1,329 cows during the period it was in operation. The fieldman made 537 farm visits, eartagged 197 heifer calves and maintained calf record books for 18 herd owners.

Testing Centres

Testing centres were in operation at the locations shown in the table below. Two full time laboratory assistants did the testing at the Edmonton centre, assisted by the fieldman. At the other centres, the resident dairy specialist did the testing assisted by part-time clerical help. Following the expansion of the Route Plan Program of cow testing into the Calgary milk shed in June, the fieldman assisted with the testing of an increasing number of samples at Calgary.

The following table shows the number of tests conducted at each centre during the past three years.

Testing Centres	1963	1964	1965
Calgary	10,509	11,782	17,726*
Camrose	2,458**	9,445	11,254
Edmonton	54,025	63,174	64,619
Fairview	2,752	2,743	2,724
Lethbridge	8,008	9,196	8,673
Ponoka	11,855	2,436**	.....
Red Deer	17,584	18,751	18,413
Vermilion	.....	3,527**	3,631
Total	107,191	121,054	127,040

*Calgary Route Plan Program inaugurated June 1, 1965.
**Centre was not in operation for the entire year.

A total of 5,986 more tests were conducted in 1965 than in 1964.

The following table summarizes the Cow Testing Service for 1965. Comparable figures for 1963 and 1964 are included.

SUMMARY

	1963	1964	1965
Number of herds under test	496	524	539
Number of cows under test	15,333	17,004	18,838
Average number of cows per herd	30.9	32.5	34.9
*Number of Cow Years	10,918	12,206	12,926
Average number of Cow Years per herd	22.0	23.3	24.0
Average production of milk (lbs.)	10,711	11,008	10,665
Average production of butterfat (lbs.)	369.3	381.8	376.0
Average Test (%)	3.45	3.47	3.52

*Herd averages on the basis of cow years. The total number of cows on test during the year was used in determining the herd average, except where new cows were placed on test, or a cow was sold or died; in these cases only that part of the year in which she produced was used.

The average production of all cows on test showed a decrease of 343 pounds of milk and a decrease of 5.8 pounds of butterfat during the year 1965 compared to 1964.

Reports and Competitions

1. Annual reports, showing both total and average milk and butterfat production, were sent to all herd owners as well as to district agriculturists' offices.

2. An Honor Roll, listing all herds of 5 cow-years or more and producing an average of over 400 pounds of butterfat, was compiled; herds were required to be under test for the entire cow testing year. A total of 131 herds qualified in 1965 as compared to 137 in 1964.

3. During 1965, graded certificates of production were issued for all cows completing the necessary production and recording requirements. Each herd owner is provided with a certified record book and these were recalled as necessary to allow the latest available production records to be added.

4. More than 425 production records were compiled on first lactation daughters of A.I. sires in herds enrolled in the Edmonton Route Plan Program of cow testing. This information was submitted to the Canada Department of Agriculture for use in their Sire Appraisal Studies. It was also used in the preliminary evaluation of young sires.

5. Higher production and herd improvement was encouraged through competitions sponsored by the Alberta Dairymen's Association. Financial assistance for prizes was received from dairy supply firms, the Dairy Branch determining the winners from cow testing records.

LABORATORY SERVICE

With the increased public demand for high quality food products and for greater protection from toxic substances in foods, the services of the Dairy Branch Laboratory are becoming more vital every year. This demand has been reflected by an increase in the number of specimens submitted to the laboratory for bacteriological, chemical and physical examinations.

Emphasis was placed again on examination of dairy products and other foods for various illegal toxic and non-toxic adulterants such as pesticides, antibiotics, preservatives, water in milk, etc. A total of 39,301 various food products and other agricultural commodities were examined in 1965. This was a 6.3% increase over the number of specimens received during the previous year.

A survey of fluid milk from dairy herds throughout the province for evidence of Q-fever was continued. This investigation was conducted in co-operation with the provincial and federal health authorities. The Q-fever study was intensified because of the first human case reported in this province in 1963.

Testing for radioactive isotopes (Cs-137 and I-131) in Alberta milk supplies was continued on a weekly basis. Fluid milk samples were collected at random from dairy plants representing various geographical locations of the province. It is significant that in all Alberta centres considerably lower levels of gamma activity were detected in milk in 1965 than in the previous year.

During 1965, the Provincial Dairy Branch Laboratory, in cooperation with the Federal and Provincial Departments of Health, continued as an investigation centre in Alberta for pesticide residue contamination in food products. The study received financial assistance from the federal government. The laboratory concentrated on improvements and applications of analytical methods and on the investigation of some special problems in the pesticide residue field. As a result, a considerable amount of valuable information was collected.

In recognizing the importance of the pesticide residue problem, the laboratory purchased additional electronic equipment for routine determinations of insecticide residues in foods and feeds. Mr. O. J. Jonasson was appointed to the laboratory staff as a pesticide chemist in April 1965. Routine analyses were carried out on dairy products, meat, eggs, vegetables and other agricultural commodities. Improved testing facilities will make it possible for more information to be made available to government officials, food processing plants, producers, feed manufacturers and other parties concerned, while at the same time the consuming public will be more adequately protected from the hazards of pesticide residues in foods.

There was an increase in the number of milk samples examined for the presence of antibiotics. It is rather interesting that the number of positive samples increased from 0.80% last year, to almost 1%.

During 1965, members of the laboratory staff attended and actively participated in numerous scientific and professional meetings in Alberta, other parts of Canada, and points in the United States. Several reports were prepared and submitted to the federal and provincial authorities. One paper concerning Q-fever, and a number of papers relating to pesticide residue analyses were submitted by the laboratory personnel to scientific journals for publication.

The following table indicates the number and type of samples analysed in 1965 with the corresponding figures for the previous year.

	1964	1965
Milk Control Service	14,316	15,703
Butter Samples for Moulds and Yeasts	3,760	3,674
Butter Samples for pH Values	1,853	1,835
Milk Samples for Q-fever	4,413	5,902
Milk Samples for Antibiotics	4,623	6,009
Water Adulteration of Milk	2,858	2,531
Bacterial Creamery Survey	835	230
Cheese Samples	109	243
Ice Cream Samples	872	766
Meat Curing Brines	253	154
Eggs and Egg Products	265	46
Pesticide Residues in Dairy and Other Products	407	731
Radioactivity in Dairy Products	123	241
Miscellaneous	2,283	1,236
Total	36,970	39,301

It will be noted that the number of samples tested for pesticide residues almost doubled. These are time consuming and this increase signifies much work accomplished.

FROZEN FOOD PLANTS

The licensing, inspection and instructional services to the Frozen Food industry continued as a function of the Dairy Branch throughout the year. A total of 1,073 regular inspections were made by eleven district inspectors compared to 1,043 for 1964. Inspectors also lifted 158 brine samples which were tested for salt percentage and bacteriological quality in the Dairy Laboratory. In addition, the supervisor made at least one inspection of every plant in operation. Assistance in planning of new plants, alterations to existing plants and the planning and establishment of new slaughter houses was given to several operators. Correspondence and enquiries dealing with administration of the Act and Regulations was handled by the supervisor.

Operations at Magrath, Raymond, Fairview and Forestburg were discontinued during the year while new locker plants were constructed at Carstairs and Rimbey to replace older and outdated facilities. A fully modern processing and locker plant was constructed and put into operation at Wainwright and modern slaughter houses were constructed at Didsbury and Provost. Extensive remodelling and additions were made to Dick's Processing Plant at Nanton, Ross' Processing Plant at Alix, Central Abattoir of Red Deer, Lethbridge Lockers and Sea Foods Limited of Lethbridge, Charles Food Service of Stettler and Warren's Frozen Foods of Elk Point. The alterations and additions have made possible improved services and efficiency of operations. Home Provisioners of Edmonton purchased Wolch's Frozen Foods Limited and combined the two businesses. At the end of the year there were 102 locker plants, 44 specialized processing plants, and 3 animal food storage plants in operation.

To select winners for the Merit Award Competition and determine those operations eligible for proficiency certificates scoring of all plants was again undertaken by the inspectors, with the top ones in each district given a final score by supervisors of the branch. Thirty-three proficiency certificates were issued to operators who met the high standards for plant operations, sanitation and services offered. The 1964 winners were announced and presented with trophies and certificates at the annual convention of the Alberta Quick Freeze Locker Association held February 7 and 8, 1965, in the Capri Motor Hotel at Red Deer. The shield for Section A (plants with over 300 lockers) was won by Wolch's Frozen Foods of Edmonton. Taber Frozen Foods Limited of Taber, and Lethbridge Locker and Sea Foods Limited of Lethbridge, placed second and third respectively. Olson and Sons Meat Limited of Sexsmith won the shield for Section B (plants with less than 300 lockers) while Drumheller Frozen Foods Limited of Drumheller and Beaverlodge Meat Market of Beaverlodge placed second and third respectively in this section.

The following tabulation was prepared from data supplied on monthly reports and covers the twelve month period ending November 30, 1965. For comparison, data for the previous year is included.

	1964	1965
Number of Specialized Processing Plants	43	44
Number of Frozen Food Locker Plants	107	102
Number of Animal Food Storage Plants	3	3
Number of Lockers Installed	23,171	19,537
Number of Lockers Rented	14,875	12,901
Percentage of Lockers Rented	64.2	66.0

Locker rentals again declined during the year due primarily to the increase in the number of home freezers in use. Several locker plants have discontinued renting lockers and are now operating as specialized processing plants. The volume of processing for lockers was down from 1964, however, the volume of processing for home freezers has been steadily increasing each year. Total volume of processing for 1965 is the highest on record.

The following table shows the average poundage processed per plant during the designated years.

Year	Pounds Per Plant
1955	89,935
1960	136,097
1964	163,186
1965	173,262

The foregoing clearly indicates the greater use by patrons of the services offered by the frozen food industry.

The increasing use of home freezers, coupled with the extension of services provided by the plants will most likely cause this trend to continue.

The following tables indicate the trend in the locker industry over a period of years.

Locker Plant Operations

Year	No. of Plants Operating	No. of Lockers Installed	No. of Lockers Rented	Per Cent of Lockers Rented	Average Lbs. Per Rented Locker
1945	61	16,770	13,572	80.9	326.0
1950	141	48,647	43,802	90.0	305.2
1955	153	51,488	43,608	84.7	307.9
1960	136	37,646	26,316	69.9	329.6
1961	131	34,125	23,881	69.9	292.9
1962	121	29,770	20,305	68.5	289.5
1963	114	26,695	17,962	67.3	286.3
1964	107	23,171	14,875	64.2	242.8
1965	102	19,537	12,901	66.0	256.2

Amount and Type of Food Products Processed in All Licensed Plants

Total amount, type and percentage of food processed in all licensed plants.

Year	Pounds Total Processed	Fresh Meat %	Cured Meats %	Lard %	Fish %	Poultry %	Big Game %	Game Birds %	Fruits %	Veg. %	Misc. %
1960	18,509,247	77.8	9.6	1.2	.4	2.9	3.4	.1	1.5	1.9	1.2
1962	16,010,445	76.9	9.3	1.2	.4	3.4	4.4	.1	1.2	2.1	1.0
1963	17,126,204	77.8	8.6	1.3	.4	2.7	4.6	.2	1.3	2.0	1.1
1964	24,477,903	82.2	8.4	1.3	.3	1.4	2.2	.1	1.3	2.1	.7
1965	25,298,363	84.3	8.4	1.2	.3	.8	2.6	.1	.8	1.1	.4

Milk Control Report

Submitted by the

PUBLIC UTILITIES BOARD

J. B. MOORE, Administrator of Milk Control

Consumption increases or decreases were as follows:

Calgary	+3.9%	Camrose	—1.4%
Crowsnest Pass	—1.3%	Edmonton	+8.8%
Lethbridge	— .9%	Medicine Hat	+2.9%
Ponoka	+ .9%	Red Deer	+3.5%

2% Partly Skimmed milk showed the most marked increase in the areas where it is marketed. Skim Milk consumption continued to increase.

Production, despite severe weather conditions, while showing decreases in the larger marketing areas, held up remarkably well. Calgary, Camrose, Edmonton, Lethbridge, Medicine Hat and Red Deer indicate decreases of 3.8%, 8.3%, .08%, .31%, .41% and 3.3% respectively. Production increases of .17% and 2.8% are indicated for the Crowsnest Pass and Ponoka areas respectively.

Licensed distributors remained constant at 24.

Licensed producers increased by 20 to a total of 870. Licensed milk producers' numbers increased by 19, cream producers' by 1.

Five Orders were issued during the year as follows:- Order No's. 26867, 26918, 27004, 27005, 27324. Orders 27004 and 27005 established Alberta Regulations 314/65 and 313/65 respectively.

One Hearing was held in Camrose.

The Board continued its active and financial support of both the Dairy Cost Survey and the several Milk Foundations.

Board representatives met with other Provincial Milk Boards during the year and continues as a member of the International Milk Control Agencies.

This year the Board hosted the Annual Convention of the International Milk Control Agencies held in Banff, August 23, 24 and 25.

STATISTICAL DATA RELATING TO MILK CONTROL

The Tables which follow relate to milk and cream supplied and sold for fluid consumption in the areas of the Province controlled by The Public Utilities Board during the year 1965.

TABLE I

Consumption of Fluid Milk Monthly, 1965 — In Quarts

(Standard, Homo, 2%, Special, Skim)

Area	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
Calgary	2,540,703	2,441,716	2,734,535	2,533,400	2,515,743	2,602,652	2,391,327	2,426,728	2,656,455	2,710,951	2,737,010	2,751,025
Camrose	72,128	68,055	75,453	71,921	71,114	66,184	69,338	63,482	67,769	73,326	74,253	74,097
Crowsnest Pass	39,755	39,573	42,391	40,424	39,280	38,401	37,917	38,229	38,833	40,599	39,190	41,798
Edmonton	3,199,860	3,116,388	3,751,886	3,274,766	3,254,085	3,416,758	3,015,377	2,929,483	3,424,185	3,373,707	3,458,603	3,327,880
Lethbridge	277,716	264,684	282,668	276,379	282,118	274,588	266,928	267,470	269,744	290,681	290,296	269,607
Medicine Hat	177,480	168,482	184,614	176,478	175,313	166,785	167,673	168,712	170,284	180,164	182,319	175,816
Ponoka	53,004	50,045	56,088	52,317	54,427	53,299	51,465	49,262	52,638	55,385	52,798	54,248
Red Deer	220,981	212,789	235,323	225,540	234,420	221,171	206,301	214,130	220,686	236,594	242,284	242,456

TABLE II

Consumption of 2% Partly Skimmed Milk Monthly, 1965 — In Quarts

Area	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
Calgary	535,683	517,507	587,364	546,316	523,927	574,693	522,181	567,869	645,452	659,140	678,004	680,926
Camrose	......	......	......	......	......	......	......	......	......	......	......	......
Crowsnest Pass	......	......	......	......	......	......	......	......	......	......	......	......
Edmonton	562,234	557,210	675,392	641,528	666,933	713,500	597,493	605,314	775,799	743,827	762,440	778,690
Lethbridge	62,203	59,777	64,460	63,678	68,654	64,925	60,655	62,015	63,869	72,085	72,650	73,026
Medicine Hat	34,789	33,147	36,534	34,974	34,874	33,680	31,878	32,272	34,316	37,037	38,512	38,758
Ponoka	......	......	......	......	......	......	......	......	......	......	......	......
Red Deer	61,348	62,585	70,409	66,699	73,154	69,601	64,818	71,214	75,648	74,711	78,929	78,633

TABLE III

Consumption of Skim Milk Monthly, 1965 — In Quarts

Area	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
Calgary	118,346	115,937	129,941	119,569	121,935	121,367	96,899	95,074	110,589	112,645	113,136	113,463
Camrose	......	......	......	......	......	......	......	......	......	......	......	......
Crowsnest Pass	......	......	......	......	......	......	......	......	......	......	......	......
Edmonton	131,524	127,114	149,009	127,808	129,992	132,519	103,407	102,371	122,486	122,213	123,822	120,893
Lethbridge	10,977	11,669	11,319	12,521	11,737	11,575	11,277	10,853	8,959	10,464	10,012	12,668
Medicine Hat	2,252	2,339	2,657	2,348	2,369	2,369	1,968	1,925	2,205	2,248	2,234	2,362
Ponoka	......	......	......	......	......	......	......	......	......	......	......	......
Red Deer	14,548	14,177	15,683	15,116	15,090	14,685	11,943	12,070	13,284	23,484	24,101	23,875

TABLE IV

Consumption of Chocolate Dairy Drink Monthly, 1965 — In Quarts

Area	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
Calgary	91,571	92,477	104,182	96,316	100,253	104,176	102,956	109,954	109,520	120,766	115,661	117,892
Camrose	2,868	2,848	3,356	3,564	3,098	3,250	3,756	3,731	3,102	3,686	3,284	3,427
Crowsnest Pass	......	......	248	835	2,541	2,529	2,565	2,353	1,610	1,400	811	360
Edmonton	137,428	141,771	166,484	140,102	135,184	134,336	126,602	123,253	137,575	148,856	142,935	141,024
Lethbridge	8,657	8,751	9,211	9,002	9,740	9,157	10,854	9,788	10,690	11,616	11,776	9,611
Medicine Hat	7,605	7,596	8,299	8,364	9,132	8,780	10,044	10,155	8,344	8,991	8,398	7,275
Ponoka	320	298	198	133	1,508	2,154	2,294	1,852	1,284	615	736	510
Red Deer	8,403	8,350	9,277	9,315	9,713	8,963	10,654	10,365	9,721	10,369	9,662	9,923

TABLE V

Consumption of Buttermilk Monthly, 1965 — In Quarts

Area	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
Calgary	22,406	23,898	28,689	28,429	30,626	38,388	39,930	47,362	28,178	27,992	24,642	23,578
Camrose	709	717	887	885	934	947	1,047	1,112	804	889	876	869
Crowsnest Pass	119	232	......	263	251	309	412	273	249	316	176	182
Edmonton	36,779	38,644	52,234	46,910	53,776	60,956	67,702	67,271	44,565	44,845	39,057	40,145
Lethbridge	2,937	3,393	3,662	3,802	4,207	4,924	6,497	5,145	4,162	3,324	3,220	3,232
Medicine Hat	1,638	1,867	2,155	2,200	2,414	2,980	3,808	3,420	1,812	1,822	1,664	1,469
Ponoka	228	250	297	303	362	459	503	472	360	366	264	305
Red Deer	1,955	2,038	2,862	2,336	2,613	2,500	2,648	2,429	2,006	1,962	1,778	1,808

TABLE VI

Consumption of Fluid Cream Monthly, 1965 — In Quarts

Area	Jan.	Feb.	March	April	May	June	July	August	Sept.	Oct.	Nov.	Dec.
Calgary	155,247	149,742	169,628	158,941	159,772	161,966	158,628	154,861	167,454	165,362	163,668	167,610
Camrose	2,910	2,874	3,133	3,020	3,146	3,089	3,046	3,202	3,205	3,350	3,190	3,366
Crowsnest Pass	251	297	327	338	259	236	254	235	203	261	204	445
Edmonton	232,775	229,010	262,469	238,162	235,569	252,136	221,171	220,297	240,073	234,454	235,641	244,783
Lethbridge	18,381	16,591	18,908	17,629	19,026	17,922	18,346	17,459	18,849	18,866	19,530	20,503
Medicine Hat	10,891	10,703	11,748	11,086	11,036	10,789	11,357	10,414	10,687	10,696	11,346	11,257
Ponoka	2,446	2,328	2,681	2,512	2,540	2,424	2,431	2,502	2,554	2,467	2,436	2,686
Red Deer	10,580	10,238	11,015	10,960	11,146	10,741	10,581	10,419	10,627	10,888	11,075	11,543

TABLE VII

Fluid Milk Consumption, 1961-1965 — In Quarts

(Standard, Homo, 2%, Special, Skim)

Area	1961	1962	1963	1964	1965
Calgary	24,722,487	26,207,185	28,391,455	29,869,216	31,042,245
Camrose	782,628	797,632	839,608	848,313	847,120
Crowsnest Pass	556,297	493,656	476,773	482,778	476,390
Edmonton	32,717,544	33,225,546	35,698,537	36,342,594	39,541,978
Lethbridge	3,408,741	3,259,261	3,180,982	3,315,833	3,312,879
Medicine Hat	1,882,136	1,931,535	1,970,063	2,035,034	2,094,120
Ponoka	407,361	451,627	629,581	629,205	634,976
Red Deer	2,052,334	2,186,617	2,529,986	2,621,256	2,712,675
TOTAL	66,529,528	68,553,059	73,716,985	76,144,229	80,662,383

TABLE VIII

Fluid Cream Consumption, 1961-1965 — In Quarts

Area	1961	1962	1963	1964	1965
Calgary	1,835,371	1,868,209	1,848,211	1,907,100	1,932,879
Camrose	31,715	33,805	36,240	37,575	37,531
Crowsnest Pass	4,589	8,802	4,634	3,748	3,310
Edmonton	2,615,477	2,713,408	2,743,344	2,715,927	2,846,540
Lethbridge	229,285	233,482	224,485	231,595	222,010
Medicine Hat	119,373	129,618	130,004	131,770	132,010
Ponoka	27,285	30,775	32,179	30,607	30,007
Red Deer	115,495	129,453	131,210	128,361	129,813
TOTAL	4,978,590	5,147,552	5,150,307	5,186,683	5,334,100
Total in B.F. equivalent —Lbs.	1,680,274	1,711,561	1,738,228	1,750,505	1,800,259

TABLE IX

Fluid Milk Purchases by Distributing Plants, 1961-1965 — In Pounds

Area	1961	1962	1963	1964	1965
Calgary	107,131,175	106,037,098	109,308,975	113,075,125	108,747,072
Camrose	2,978,372	2,706,404	2,900,792	2,951,548	2,707,417
Crowsnest Pass	1,373,700	1,429,400	1,296,300	1,329,100	1,331,400
Edmonton	147,697,071	145,051,248	147,820,425	155,864,855	155,739,003
Lethbridge	25,274,500	25,549,300	27,261,500	25,588,900	25,508,800
Medicine Hat	8,110,100	7,944,300	8,034,600	7,904,300	7,870,200
Ponoka	1,359,758	1,675,308	1,797,565	1,700,689	1,749,237
Red Deer	8,310,071	8,533,444	8,831,241	8,949,612	8,652,401
TOTAL Pounds	302,234,747	298,926,502	307,251,398	317,361,129	312,305,530

TABLE X

Number of Milk and Cream Producers and Distributors Operating on December 31st, 1965 under the Public Utilities Board License

Area	MILK		CREAM		TOTAL	
	Producers	Distributors	Producers	Distributors	Producers	Distributors
Bowden	1	1	......	......	1	1
Calgary	256	6	......	......	256	6
Camrose	6	2	......	......	6	2
Crowsnest Pass	6	1	......	......	6	1
Edmonton	466	5	31	......	497	5
Lethbridge	42	2	22	......	64	2
Medicine Hat	20	2	......	......	20	2
Ponoka	4	1	1	......	5	1
Red Deer	15	4	......	......	15	4
TOTAL	816	24	54	......	870	24

TABLE XI

Prices in effect as at December 31, 1965

Area	To Producers Per 100 lbs. 3.5% B.F.	To Consumer Per Quart*	10% Substandard Per Pint	18% Table Cream Per Pint	32-34% Whipping Per Half Pint	Chocolate Milk Per Quart	Butter Milk Per Quart	Skim Milk Per Quart
	$	c	c	c	c	c	c	c
Bowden	4.56	.19	......	......	.27	......	......	......
Calgary	5.10	.23	.25	.43	.33	.25	.22	.18
Camrose	5.10	.21	.24	......	.30	.24	.22	......
Crowsnest Pass	5.25	.24	.30	......	.40	.25	.24	.18
Edmonton	5.10	.22	.25	.43	.33	.25	.22	.17
Lethbridge	5.10	.23	.25	......	.34	.24	.22	.18
Medicine Hat	5.10	.23	.25	......	.34	.24	.22	.18
Ponoka	4.75	.20	.24	......	.30	.22	.20	......
Red Deer	5.10	.23	.25	......	.33	.25	.22	.18

*Milk to consumer per quart price refers to Canadian standard measure of "Standard" milk delivered to "Retail Consumers".

December figures in Tables I - VI inclusive are estimates.

Homogenized quart prices 1c above standard quart prices. Exceptions: Calgary—½c above—Ponoka—same price obtains for both classes.

TABLE XII

Consumer and Producer prices in effect in Specified Cities Across Canada

(as at November 1st, 1965)

	Consumer Prices Homogenized Milk—Quarts	Producer Prices—Cwt.		
			B.F. Basis	Differential
	c	$	%	c
Charlottetown	.23	4.62	3.6	.06
Halifax	.25	5.71	3.7	.03
Sydney	.25	5.90	3.7	.03
St. John	.25	5.45	3.8	.03
Montreal	.25	5.10	3.5	.06
Quebec	.25	5.10	3.5	.06
Toronto	.27	5.26	3.4	.05
Winnipeg	.25	5.10	3.5	.05
Regina	.26	5.50	3.5	.05
Edmonton	.23	5.10	3.5	.05
Calgary	.23½	5.10	3.5	.05
Vancouver	.27	6.41	4.0	.062

Report of the Poultry Branch

ROBT. H. McMILLAN, B.S.A., Poultry Commissioner
G. R. MILNE, B.S.A., Poultry Supervisor
K. DARLINGTON, Poultry Fieldman, Edmonton
K. H. ROWE, B.S.A., Poultry Specialist, Edmonton
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G. O. JOHNSON, B.S.A., Poultry Specialist, Camrose
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GENERAL REVIEW

Total volume of production of commercial egg production decreased slightly although there was a small increase for Canada as a whole. Heavy production in the early half of the year resulted in low prices to producers. The largest deficiency payment since the program's inception in 1959 was paid by the Canada Department of Agriculture. This was a payment of 4.3c per dozen up to 4,000 dozen Grade A Extra Large, Grade A Large and Grade A Medium.

Year	Egg Station Receipts 30 dozen cases	Chicken Broiler Eviscerated Weight Registered Stations	Turkey-Mature Eviscerated Weight Registered Stations
1964	488,209	22,077,000	12,699,000
1965 (est.)	458,567	21,915,000	14,177,000

Commencing early in April and continuing to the year-end wholesale dealers discounted general farm run eggs and mixed color eggs, particularly at country points, by 4c to 5c per dozen. Decreased returns to producers and decreased volume resulted in a number of rural egg grading stations closing. Major companies sold some stations to local operators. Of 107 egg grading stations January 1, 1965, 95 remained operative at December 31, 1965.

	Total Eggs Produced Millions of dozens	Weighted Egg Prices to Producers as determined by Registered Egg Station Receipts
Year	Alberta	Alberta
1961	41.3	24.4
1962	39.3	25.0
1963	37.0	27.1
1964	38.5	21.8
1965	36.6	29.7

The chicken broiler industry steadied after early February and production for the year was comparable to 1964. Subsidization of growers by feed, hatchery and processor was discontinued. Prices to growers held for the balance of the year at 20c to 22c per pound live weight.

Turkey production increased slightly over 1964 and returns to producers 1c to 2c per pound live weight stronger. A noticeably shorter growing period was evident, however average weight of birds marketed remained the same as the previous year. There was an increase in the production of turkey broilers from 1,223,000 in 1964 to 1,455,000 in 1965 eviscerated weight. Per capita consumption of turkey meat increased from 8.1 pounds in 1964 to an estimated 10 pounds.

Central Alberta Dairy Pool ceased its poultry processing and eviscerating operations but continued its egg and poultry canning operations.

FLOCK APPROVAL

The pullorum testing and banding of chicken and turkey hatching egg supply flocks continued in 1965. To handle the bulk of this work eight temporary inspectors were employed from September through December. Females tested for egg replacement purposes in 1965 were 23½% less than 1964 and females tested for broiler production showed an increase of 6.0%. Turkey females tested increased by 10.0%.

All hatching eggs set in licensed hatcheries must be from inspected and pullorum disease free flocks. Table I summarizes the number of flocks and birds inspected and tested for pullorum disease.

TABLE I

FLOCKS AND FEMALES TESTED, ALBERTA EGG REPLACEMENT AND BROILER

(First Test on Completed Flocks)

		No. of Flocks		No. of Birds	
Year	Method of Testing	Egg	Broiler	Egg	Broiler
1964	Whole Blood	336	259	163,680	161,179
1965	Whole Blood	231	245	125,082	170,940

	Average Size of Flock		
	Egg	Broiler	% Reaction
1964	536	688	.006
1965	541	697	.003

Table II summarizes total turkey flocks and turkeys inspected and banded.

TABLE II

SUMMARY OF TURKEY APPROVAL 1963-1965

Year	No. of Flocks	No. of Birds	Average Size of Flock
1963	32	46,704	1,459
1964	23	45,395	1,973
1965	25	49,948	1,998

In 1965, 78.0% of the turkey hatching egg supply flocks were Broad Breasted Bronze, 16.6% Large Whites and 5.4% Small Whites as compared to 67%, 31% and 1.6% respectively in 1964.

LICENSING AND BONDING OF DEALERS IN POULTRY AND POULTRY PRODUCTS

A. PRODUCE

The poultry Branch administers Regulations Respecting the Licensing and Bonding of Dealers in Poultry and Poultry Products under the Livestock and Livestock Products Act. Every person carrying on a business as a dealer must obtain a license to conduct such business. As of January 1, 1956, as protection to producers, all wholesale dealers were required to furnish a surety bond in favor of the Minister ranging from $1,000.00 to $10,000.00 dependent upon the volume of business conducted.

TABLE III

Year	First Receivers	Reg. Egg Grading Stations	Reg. Poultry Processing Stations	Reg. Poultry Eviscerating Stations	Reg. Poultry Grading Stations	Temporary Grading Stations	Poultry Packing Stations
1961	10	136	23	14	9	0	8
1962	12	125	19	11	8	0	8
1963	10	119	19	11	7	0	9
1964	18	112	19	11	7	0	15
1965	22	95	14	11	6	0	21

B. HATCHERY

The Poultry Branch administers Regulations Respecting the Production and Sale of Chicks Under the Alberta Livestock and Livestock Products Act. All commercial and custom hatcheries with an incubator capacity of 1,000 eggs or more are licensed. Since 1951 commercial hatcheries are required to furnish a surety bond, in favor of the Minister, for protection of hatching egg producers, ranging from $2,000.00 to $5,000.00 dependent upon incubator capacity.

A continued reduction in numbers of commercial hatcheries operating was noted although total egg setting capacity for the Province was not greatly reduced.

TABLE IV

DEVELOPMENT OF HATCHERIES

Year	Breeder Hatcheries	Commercial Hatcheries	Setter Capacity	Hatcher Capacity	Total
1964	7	37	3,489,636	......	......
1965	6	33	4,732,920	778,889	5,511,809

TABLE V

CHICK DISPOSITION

Year	Hatchability	Chicks Hatched	Chicks Not Sold	Chicks Exported	Chicks Imported	Chicks Remaining in Province
1961	70.0	14,544,564	679,377	621,299	503,550	13,734,058
1962	70.1	13,084,102	881,652	598,122	569,273	12,173,601
1963	70.2	15,070,648	1,091,460	606,641	879,505	14,252,052
1964	68.7	15,701,591	1,258,299	368,152	481,435	14,556,575
1965	67.4	15,081,002	1,279,299	597,039	617,057	13,821,721

TABLE VI

CHICK PRODUCTION BY TYPE

For Egg Production Type			For Broiler Production Type		
1965	1964	% Change	1965	1964	% Change
5,463,418	6,237,004	—12.4	9,617,584	9,464,587	+1.6

TABLE VII

POULT PRODUCTION

Year	Eggs Set	Eggs Imported	Poults Hatched	% Hatch-ability	Poults Imported	Poults Exported	Poults on Alberta Farms
1961	3,187,674	1,005,489	1,708,081	53.5	46,804	196,860	1,558,025
1962	2,667,391	613,619	1,375,515	51.3	14,040	41,944	1,347,611
1963	2,362,591	207,194	1,291,485	54.6	58,048	86,028	1,241,742
1964	2,099,610	463,444	1,136,876	54.1	41,946	48,499	1,130,323
1965	2,095,189	376,753	1,216,805	58.1	96,912	69,387	1,244,330

Poult production in Alberta hatcheries in 1965 was 1,216,805 poults, an increase of 7% over 1964.

Importation of U.S. franchised strains remained fairly static in 1965. These accounted for 73% of the white leghorn type chicks, 80% of chicken broiler type chicks, and 63% of the meat type turkey poults.

TABLE VIII

IMPORTATION FROM THE UNITED STATES
1965

	CHICKEN				TURKEY			
	From Egg Production Matings		From Broiler Production Matings		From Meat Production Matings		From Broiler Production Matings	
	Eggs	Chicks	Eggs	Chicks	Eggs	Poults	Eggs	Poults
January	......	......	......	8,000	......	......	26,000	......
February	......	2,900	......	17,057	......	......	35,984	......
March	......	12,377	......	17,764	......	......	41,381	......
April	3,240	11,238	......	21,677	13,800	......	32,169	......
May	5,040	5,294	......	14,470	16,400	16,450	17,400	......
June	......	2,703	......	21,824	......	5,000	21,600	......
July	......	......	......	14,047	......	......	30,000	......
August	......	2,860	......	22,256	......	......	12,000	......
September	......	......	......	36,188	......	......	8,600	2,000
October	......	3,250	27,000	14,745	......	......	27,000	......
November	......	......	......	5,998	......	......	13,000	......
December	......	......	......	15,810	......	......	8,925	......
TOTAL	8,280	40,622	27,000	209,836	30,200	21,450	274,059	2,000

THE POULTRY INDUSTRY

Egg marketings at registered egg grading stations are indicated in Table IX. These receipts represent an estimated 46% of the total production, comparable to 1964. Weighted egg prices to producers increased 8.0 cents per dozen over 1964.

TABLE IX

	Egg Receipts at Registered Egg Grading Stations (30 dozen cases)	Weighted Egg Price to Producers by Grade per Dozen
1961	484,906	24.4 cents
1962	473,071	25.0 cents
1963	442,725	27.1 cents
1964	486,597	21.8 cents
1965	468,198	29.8 cents

TABLE X

POULTRY EVISCERATED IN REGISTERED STATIONS

(Pounds)

	CHICKENS				
Year	Under 4 lb.	Over 4 lb.	Fowl	Ducks	Geese
1961	14,121,713	1,372,489	2,334,092	5,348	556,451
1962	14,031,000	870,000	2,185,000	5,000	470,000
1963	18,448,000	641,000	2,118,000	6,000	434,000
1964	21,962,000	1,108,000	2,434,000	19,000	457,000
1965	22,245,000	783,000	2,082,000	3,000	439,000

	TURKEYS			
Year	Under 10 lb.	10 to 16 lb.	Over 16 lb.	Total
1961	337,973	7,109,576	7,106,494	14,554,043
1962	492,000	4,352,000	7,328,000	12,172,000
1963	750,000	4,446,000	8,248,000	13,444,000
1964	1,223,000	4,022,000	7,332,000	12,577,000
1965	1,455,000	4,418,000	8,383,000	14,256,000

The laying hen numbers and market turkey numbers on Alberta farms is indicated in Table XI.

TABLE XI

FARM POPULATION

Year	Laying Birds	Turkeys
1961 (DBS)	2,730,000	1,184,000
1962	2,400,000	820,000
1963	2,170,000	765,000
1964	2,280,000	750,000
1965	2,325,000	900,000

ALBERTA RANDOM SAMPLE TEST

The Alberta Random Sample Test, completing the 500 day egg production test period in August, again showed a general high level of performance. The average egg production of 239.1 eggs, and the top producing entry attaining a production of 266.8 eggs, were the best records yet achieved at this Test.

Eleven different egg production strains were tested, representing commercial stock from breeders in Alberta, B.C., Saskatchewan, Manitoba, Illinois and New York. Most of these stocks were widely distributed in this province. All factors of economic importance were evaluated for each stock and compared one against the other.

The following table compares average egg production and average laying house mortality for the eight completed tests:

Test	Egg Production per Hen Housed	Laying House Mortality
First	201.2	14.8%
Second	219.7	10.7%
Third	213.8	9.0%
Fourth	229.3	6.6%
Fifth	226.0	5.4%
Sixth	217.4	10.7%
Seventh	238.2	3.6%
Eighth	239.1	5.8%

The following table indicates the performance in some of the factors tested of entries in the Eighth Test:

TABLE XII

EIGHTH ALBERTA RANDOM SAMPLE TEST

Entrant	Egg Prod. Per Hen Housed	% Grade A Large Eggs	% Laying House Mortality	Lbs. Feed per Dozen Eggs	Net Income Per Hen Housed
1	245.3	63.4	0.0	4.6	$1.83
2	266.8	67.6	6.0	4.7	1.92
3	239.8	56.4	7.0	4.4	1.71
4	248.2	62.9	3.0	4.3	1.87
5	233.3	56.9	3.0	4.9	1.59
6	235.7	58.9	5.0	4.9	1.38
7	259.7	67.7	5.0	4.4	2.09
8	224.6	63.9	7.0	4.8	1.61
9	233.9	59.5	5.0	4.6	1.63
10	221.2	51.8	10.0	4.9	1.15
11	221.7	64.2	13.0	4.8	1.50
Average	239.1	61.2	5.8	4.6	1.66

Detailed reports were forwarded to the entrants at three month intervals, and the final report distributed to a large mailing list and made available for publication in poultry journals. Also, results of the Test, as well as results of research and practical experience were passed on to producers, hatcherymen, and interested persons by members of the Poultry Branch staff.

POULTRY SHOW

The 51st Annual Alberta Poultry Show was held in Calgary in December. It was noted entries were a little down. This was attributed entirely to the current difficulties of shipment of live birds by common carrier. Public attendance and auction sale were good.

BRANCH ACTIVITIES

The following table indicates the number of farm calls and meetings requested and attended by members of the Branch:

Service Calls				Meetings			
1962	1963	1964	1965	1962	1963	1964	1965
625	1,438	1,659	1,478	42	44	37	39

The poultry councils, commercial egg growers, chicken broiler, turkey, hatchery and produce associations continued active throughout the year being concerned largely with marketing problems.

The 15th Annual Poultry Industry Conference, sponsored jointly by the Veterinary Services and Poultry Branches, was held in Edmonton. Interest and attendance continued high.

The Hatchery Sanitation Control Testing Program continued on a voluntary basis. It received 100% cooperation and has proved a valuable adjunct to individual hatchery sanitation programs.

As demanded by the produce trade, hatchery, feed companies and producers the Poultry Branch continued to prepare information on estimated costs of production of commercial eggs, hatching eggs, chicken broilers, and turkeys.

As requested by hatcheries, processors and commercial broiler growers, the Poultry Branch continued preparation and summation of grower costs and returns. In addition, a broiler supply and estimated production situation was prepared and published monthly. Reports on three studies were published during the year; namely, "Poultry Litter—Feed For Ruminants", "Egg Quality Study" and "A Study on Eggs".

The Producer Vendor Summary was prepared again this year. A further increase in numbers of layers maintained by these producers was noted. It is estimated these account for close to 50% of commercial or carton egg requirements of the province.

The Poultry Branch in cooperation with other Branches participated in several specific studies:

(1) POULTRY COST STUDY—jointly with Farm Economics Branch. A study of 15 selected commercial egg operations.
(2) COMMERCIAL FLOCK HEALTH SURVEY—jointly with Veterinary Services Branch. A study of causes and contributing factors of all mortality on five selected commercial egg farms. An interim report was prepared.

(3) PESTICIDE RESIDUE IN EGGS—a study and assessment of residue of certain pesticides in eggs from selected commercial farms from all areas of the province was carried on.

(4) WESTERN EQUINE ENCEPHALOMYELITIS SURVEY—assistance was given the Department of Health in selecting suitable premises for establishment of sentinal flocks throughout the province for assessment of sleeping sickness.

The Poultry Commissioner attended the annual meeting of the Canadian Produce Association (Western Division) and a Federal-Provincial meeting of poultry officials. He attended the London Ontario Poultry Conference, and contacted commodity boards in Ontario and Manitoba. He and/or members of the Poultry Branch served on committees of various industry organizations and attended many meetings of industry groups.

Report of the Fur Farms Branch

1965

R. W. GILLIES, Supervisor

GENERAL

As anticipated in last year's report, the season of 1964-65 was not as good as the season before, due mainly to a drop in mink prices. While this adjustment in price, cut into farm income, it resulted in a clean out of pelts in the early markets and allowed the fur farmer to gear and adjust his farm operation accordingly. The kit crop was slightly above normal and supply of fish for mink feed, stood up very well indeed with a resulting bumper crop of 186,181 mink pelts being presented to the trade from the province of Alberta.

HEALTH

Nine cases of distemper were reported and it was suspected that other minor outbreaks might not have been reported. A number of cases resulted in severe losses that might have been avoided if assistance had been called for earlier. The province was clear of Virus Enteritis for the first time since 1959. Aleutian Disease in Alberta mink seemed to be more prevalent and followed much the same course, as the case in other provinces. A more complete report on this subject will appear in the Veterinary Services report.

SHOWS AND FIELD DAYS

The live mink show scheduled for Canyon Creek-Widewater was cancelled due to the seasonal outbreak of distemper. In lieu of the show, a field-day-meeting was held. Calgary also held a meeting and Lac La Biche had a field day and meeting at which Cecil Johnstone of Hudson's Bay Company, Montreal and Fay Blaine of Calgary judged and classified about 160 mink.

The Chinchilla Breeders held two regional shows; one in Calgary and the other in Edmonton during February. A provincial field day was held in Lacombe and a local field day held in Edmonton at the Sportex in September. These breeder organizations are well organized and conduct well planned and educational events.

FUR BREEDERS ASSOCIATIONS

The main function of the mink breeders for the past season was the hosting of Canada Mink Breeders Association at the Holiday Inn in Calgary on September 15 and 16. The Government of Alberta acted as hosts at one of the functions of this meeting, which seemed to be much appreciated by the delegates and visitors of the Fur Trade from across Canada and U.S.A.

The second Chinchilla club was formed in the Calgary area and also a new club was formed in the Grande Prairie region, during the 1964-65 season. The Fur Branch assists these groups when requested.

OFFICE AND FIELD PROGRAM

The established office routine was continued and maintained, along with as much field inspection and visitation as time would permit. Rabbits for meat and fur seemed still to be a popular subject on which much correspondence was issued. The interest in this animal was mainly for the meat. Some responsibilities may have to be assigned in regulating the production of this meat for human consumption.

A change in secretarial staff was required during this period.

CURRENT

The dark clouds that were evident a year ago, have brightened somewhat with the market for the current pelt crop of December 1965; showing an increase in pelt returns in all color phases except pastels. By the time this report has reached the printers, it is expected that the entire 1965 crop of Alberta mink should be merchandised at a better average price than a year ago. With this situation, the mink farmer can look forward to the next 12 months with a measure of optimism, particularly those with average or better quality mink.

Chinchilla pelt returns need to show improvement.

FUR FARM STATISTICS UP TO AUGUST 31, 1965

Number of Animals Declared on Fur Farms in Alberta, 1964-65

Kind of Animals	Total No. of Animals	Av. Value Per Animal Sept., 1964	Total Valuation
Mink Standards	99,048	$18.00	$1,782,864.00
Mink Mutations	152,758	15.00	2,291,370.00
Chinchilla	8,936	13.00	116,168.00
Fox	38	20.00	760.00
Nutria	37	5.00	185.00
Miscellaneous	43	15.00	645.00
	260,860		$4,191,992.00

Livestock Value on a current pelt basis.

Number of Animals Pelted on Fur Farms in Alberta, 1964-65

Kind of Animals	Total No. of Animals	Av. Value Per Animal Sept., 1964	Total Valuation
Mink Standards	72,117	$18.00	$1,298,106.00
Mink Mutations	114,064	15.00	1,710,960.00
Chinchilla	1,414	13.00	18,382.00
Fox	16	20.00	320.00
Fox (Stale from Storage)	97	15.00	1,455.00
Nutria	10	5.00	50.00
	187,718		$3,029,273.00

Number of Live Animals Exported from Alberta, 1964-65

Kind of Animals	Total No. of Animals	Av. Value Per Animal	Total Valuation
Mink Standards	922	$ 55.00	$ 50,710.00
Mink Mutations	1,507	65.00	97,955.00
Chinchilla	119	100.00	11,900.00
Miscellaneous	4	50.00	200.00
	2,552		$ 160,765.00

Number of Animals Retained for Breeding Stock in Alberta

Kind of Animals	Total Number of Animals Retained 1963-64	1964-65
Mink Standards	23,327	26,009
Mink Mutations	27,337	37,187
Chinchilla	5,127	7,403
Fox	12	22
Nutria	125	27
Miscellaneous	53	39
	65,981	70,687

Fur Farm Licenses

	1963-64	1964-65
Mink	252	249
Mink, Fox & Miscellaneous	3	2
Chinchilla	102	123
Nutria	4	2
Chinchilla & Nutria	1	0
Miscellaneous	2	1
TOTAL	364	377

Mink Pelt Production 1959 to 1965

Year	Total Pelts	Value
1964-65	186,181	$3,009,066.00
1963-64	181,698	3,240,234.00
1962-63	156,189	2,577,110.00
1961-62	151,416	2,536,990.00
1960-61	146,590	2,233,895.00
1959-60	135,343	2,684,500.00

Report of the Water Resources Branch

F. L. GRINDLEY, B.A., B.Sc., P.Eng., Director of Water Resources
R. E. BAILEY, B.Sc., P.Eng., Chief Engineer

ADMINISTRATION

Legislation

The Water Resources Branch is responsible for the administration, on behalf of the Minister, of the following Acts:

1. The Water Resources Act
2. The Control of Ground Water and Water Wells
3. The Drainage Districts Act
4. The Irrigation Districts Act
5. The Private Ditches Act
6. The Water Users Districts Act
7. The Eastern Irrigation District Act
8. The Western Irrigation District Act
9. The United Irrigation District Act and Colonization Act
10. The St. Mary and Milk Rivers Development Act
11. The Lethbridge Northern Colonization Act
12. The Bow River Development Act
13. The Crop Payment (Irrigated Land Sales) Act
14. The Irrigation Projects Act

Policies and Programs

In addition, the basic policies, functions and services of the Branch include the following:

(1) To measure, survey and assess all sources of water supply in the Province of Alberta.

(2) Under the provisions of The Water Resources Act to license all works for the diversion of water for domestic, municipal, industrial, irrigation, water power and other purposes.

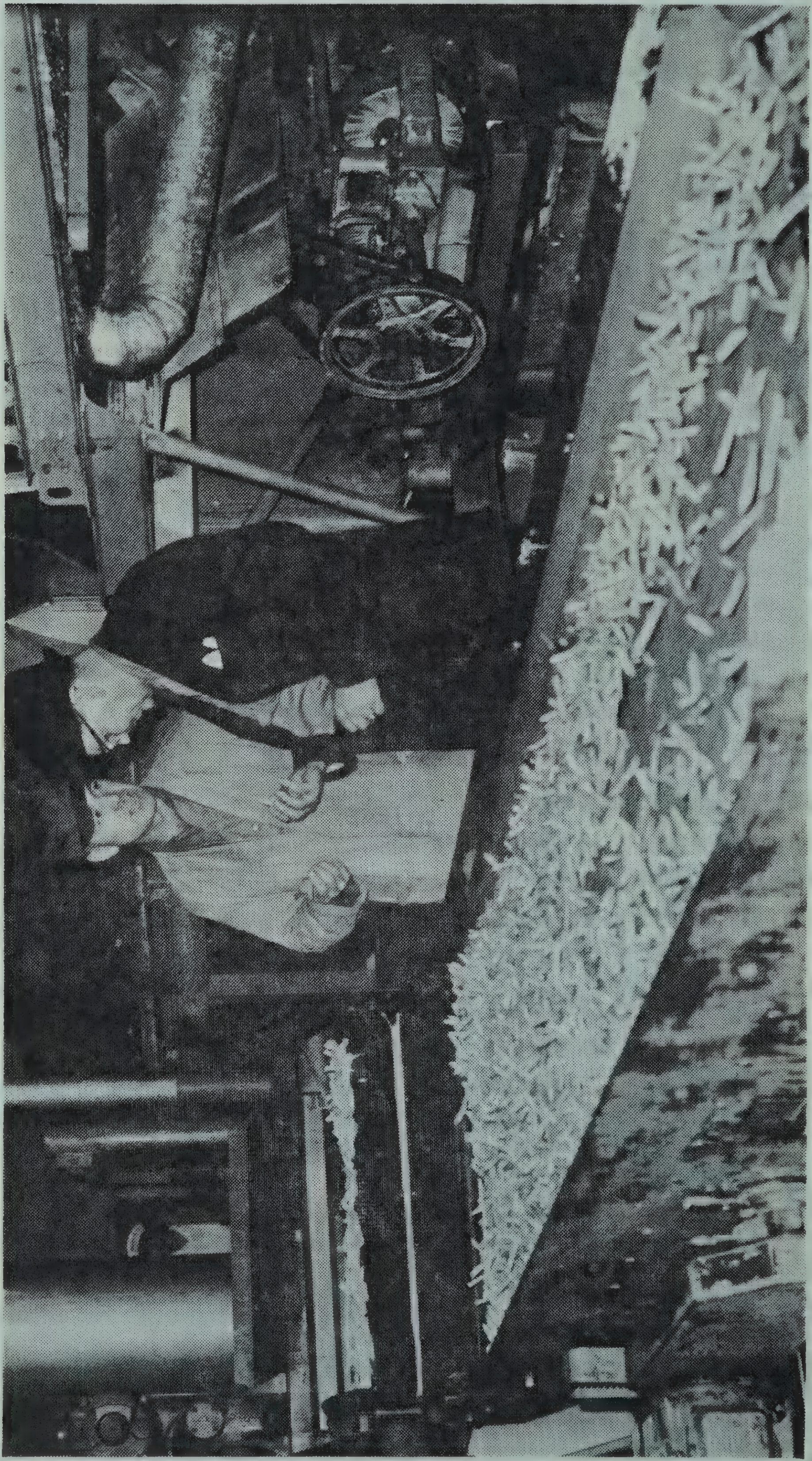
(3) To determine if the licensees are receiving supplies of water in accord with their licenses in order that the direct and indirect investments of the licensees will be protected in perpetuity.

(4) To investigate all drainage proposals or works whether large or small with respect to adequate outlets and any other relevant factors.

(5) In co-operation with the Dominion Government to formulate and execute plans for hydrometric service.

(6) In co-operation with the Dominion Government to formulate and execute plans for water development in the drought areas of the province.

(7) In co-operation with the Provinces of Saskatchewan and Manitoba and with the Dominion Government to formulate



French Fries — Alberta Canning, Lethbridge, Alberta plans for an equitable apportionment of waters in the Saskatchewan River Basin.

(8) To supervise all irrigation engineering development authorized under legislation of the Government of Alberta.

(9) To supervise all authorized drainage works under the provisions of legislation of the Government of Alberta.

(10) To supervise all authorized hydroelectric developments in the Province of Alberta.

(11) To license and control the drilling of wells for ground water supplies.

(12) In co-operation with other agencies of the Government of Alberta to investigate water problems of mutual interest. These other agencies include the Departments of Lands and Forests, Public Health, Highways and Municipal Affairs.

(13) Under the authority of the Minister of Agriculture and the Executive Council of the Province of Alberta to execute any proposals concerning water control that are deemed to be in the public interest and fall within the provisions of The Water Resources Act.

(14) To maintain and preserve in perpetuity all surveys, plans, reports and other data relating to the above functions and services.

(15) To provide engineering and financial assistance to municipalities and other local authorities for work or undertakings in the nature of
  (i) a drainage project or irrigation project or a drainage and irrigation project
  (ii) a water power project
  (iii) a water supply project
  (iv) a river project or flood control project or a river and flood control project
  (v) a water supply development project

(16) Investigations of disputes and problems arising over the use or misuse of water.

(17) Design, construction, maintenance and operation of water control works which are considered to be in the public interest.

The Prairie Rivers Improvement and Management Evaluation (P.R.I.M.E.)

Although many areas of Alberta are well endowed with water supplies, the general overall picture based on a rainfall of 12" to 18" annually can only be described as fair. For example, it may come as a surprise to proponents of the N.A.W.A.P.A. scheme to learn that the vast northern area through which the Athabasca and Peace Rivers flow only receives 15 to 16 inches of rainfall in an average year.

Streams of local origin are non-permanent and it is reasonable to suppose that any underground aquifers that exist do not receive much replenishment.

Our rivers originating on the east slope of the Rockies are reasonably reliable but to indicate a serious basic problem we have selected the North Saskatchewan River at Edmonton for examination. The mean flow or discharge was 7,570 c.f.s. but the flow extremes vary from a daily maximum of 164,000 c.f.s. to 220 c.f.s. The maximum flow occurs in June and the minimum in January. The total annual discharge for 1961-62 was 4,592,000 acre-feet whereas in 1957-58 it was 5,976,000 acre-feet. Thus we have not only wide differences in total annual flows but also in monthly and daily flows. The only means of correcting these wide discrepancies in flow is by building storage dams in the foothills and mountains.

The North Saskatchewan could be described as a typical east slope river but, again, we would need to emphasize that we have significant differences between rivers originating at the higher elevations of the mountains and those coming from lower elevations. This further underlines the need in some instances for diversions and storages.

The above statement will introduce the most important theme of our water plan. Simply stated, the plan is designed basically to store water in the headwater areas and by appropriate diversions to distribute the stream flow generally but to keep in mind that the southern areas of the prairie provinces will always require an added share of the distribution.

Viewed in this light the William Pearce Scheme is only a relatively small part of the water plan. When we divert and store the excess flood waters of the Clearwater and Ram Rivers in such a manner as to augment the flow in the Red Deer, we not only make the Pearce Scheme possible but we also move water from a river against which there are few consumptive demands (North Saskatchewan) to a river that will soon be over-appropriated (South Saskatchewan).

When we continue this process by storing and diverting some of the excess flood waters of the tributaries of the Athabasca to the North Saskatchewan and from the tributaries of the Peace to the Athabasca we complete the picture.

When completed the net result will be a firm-up of the winter flow in all our rivers including some streams that presently have little or no winter flow. Damaging flood waters will be held back, pollution will be abated and substantial amounts of hydroelectric energy will have been generated.

All of this plan can be carried out with a minimum of destruction of the natural beauty of our province. No fantastic pumping lifts are involved such as have been included in the external planning being done in the U.S.A. (and elsewhere), and no large areas of productive farm lands will be inundated.

The capital costs will not be any more serious than those we have already encountered in building our large irrigation and hydro installations.

It is relatively simple to divert the Clearwater (North Saskatchewan basin) to the Red Deer (South Saskatchewan). It is also relatively easy to cross the height of land separating the Arctic and Hudson Bay Drainages. And all of this can be done by economical gravity diversions.

The P.R.I.M.E. Plan is based on the following concepts:

(1) Since Alberta consumes about one million acre-feet of water annually from the South Saskatchewan River for irrigation, we should plan our development to eventually replace this irrigation usage by waters from the northern streams which include the North Saskatchewan, Athabasca and Peace Rivers.

(2) This replacement of irrigation water usage by flood waters from the more abundant flow in our northern streams can be accomplished by gravity diversion canals built in conjunction with upstream storage dams with the net result of improving regime flow in all of our rivers.

(3) A firm water supply for domestic, municipal, industrial, irrigation and hydro power will supplant the existing wild spring and summer floods and critically low winter flows.

(4) Some streams with non-permanent flow, e.g. Sturgeon, Blindman, Battle and Medicine Rivers would receive additional supplies from more reliable sources of supply.

(5) If possible we should try to give priority to projects that will give immediate returns on the capital investment.

(6) Pollution abatement by increased winter flow will be an important side benefit from the plan.

(7) A map has been prepared to outline the above plan. Much work has been expended on the plan and much more remains to be done.

(8) The plan is entirely practical from an engineering point of view.

(9) Since there are several excellent storage sites in the National Parks it would be necessary to obtain the viewpoint of the Federal Government on the desirability (or otherwise) of using these storage sites in the parks. We feel that if releases of water from storage are limited to the winter months, then the storage dams in the parks could be an attraction rather than a detriment.

(10) Over the suggested construction period the plan would be changed many times as new information became available and as new patterns of resource development take place.

(11) In the evaluation and management of water resources the priority in water use should be

  (a) Those uses directly necessary to human life—domestic and municipal;

  (b) those uses where there is no substitute for water—irrigation and industrial;

  (c) those uses of water for which there are substitutes—hydro and navigation, and

  (d) other beneficial uses of water—recreation, etc.

INTERPROVINCIAL WATER ADMINISTRATION

The Prairie Provinces Water Board

In order to outline the story behind the inability of the Prairie Provinces Water Board to deal with Alberta's request for realistic allocations to her irrigation projects we print herewith the resolution considered by the Board at the April 15 meeting in Regina:

"WHEREAS, the Prairie Provinces Water Board, hereinafter called "the Board" was established in 1948 by Agreement between the Governments of Canada, Alberta, Saskatchewan and Manitoba,

"AND WHEREAS, one of the functions of the Board is to recommend the allocation of water as between Manitoba, Saskatchewan and Alberta, of streams flowing from one province into another province,

"AND WHEREAS, participating governments have by Orders-in-Council (Canada P.C. 4030/49, Manitoba 1121/49, Saskatchewan 1307/51, Alberta 857/49) adopted the recommendation of the Board that Alberta be allocated waters from the South Saskatchewan River and its tributaries as summarized hereunder:

Project	Irrigable Acres	Allocation in acre-feet
Eastern Irrigation District	281,000	562,000
Western Irrigation District	50,000	85,700
Bow River Irrigation Development	240,000	478,534
Lethbridge Northern District	96,135	150,000
St. Mary & Milk Rivers Development	465,000	796,000
United Irrigation District	34,000	51,000
Aetna Irrigation District	7,300	13,000
Mountain View Irrigation District	3,600	6,000
Leavitt Irrigation District	4,400	7,000
Macleod Irrigation District	5,000	8,000
Private Projects	70,000	80,000
TOTALS	1,256,435	2,237,234

"AND WHEREAS, the Board after due consideration adopted in November 1963 and improved procedure for computing irrigation water requirements,

"AND WHEREAS, on February 24, 1964, the Board received from the Honourable H. E. Strom, Minister of Agriculture for Alberta, a request for a revision in the allocations of water previously adopted by the participating governments and the requested amounts of water, computed in accordance with the improved procedures, are summarized in the attached Schedule "A",

"AND WHEREAS, the Board has under study the feasibility of apportionment of interprovincial streams as between provinces rather than allocation to projects,

"AND WHEREAS, the Board has agreed that such apportionments or allocations should be made for net depletions rather than gross diversions, and that the allocation should limit

Packaging Potatoes — Tona Ohama Plant, Vauxhall, Alberta the total annual depletion by province rather than by projects,

"THEREFORE, the Board recommends:

1. that the allocations previously granted to the Province of Alberta in accordance with the aforementioned Orders-in-Council be withdrawn;
2. that the Province of Alberta be authorized to divert such quantities of water from the South Saskatchewan River and its tributaries as will enable it to keep and use the amounts of water shown as net depletions in Schedule "A" for any or all of the specified projects;
3. that the total annual depletion for all projects in Schedule "A" shall not deplete the flow of the South Saskatchewan River and its tributaries by more than 2,119,525 acre-feet."

Schedule "A"

Project	Irrigable Area in acres	Net Depletion in acre-feet
Eastern Irrigation District*	281,000	523,866
Western Irrigation District*	75,000	85,094
Bow River Project*	240,000	468,070
Lethbridge Northern Irrigation District*	96,000	121,627
St. Mary-Milk Rivers Development*	465,000	793,622
United Irrigation District	34,000	36,836
Aetna Irrigation District	7,300	8,810
Mountain View Irrigation District	3,600	4,345
Leavitt Irrigation District	4,400	5,310
Macleod Irrigation District	5,000	6,203
Ross Creek Irrigation District	2,300	4,492
Small Projects	70,000	61,250
TOTAL	1,283,600	2,119,525

*Includes water for municipal, industrial and other types of use within the project area as per Schedule "B".

Schedule "B"

Water Required for Municipal, Industrial and other types of use in certain Irrigation Project Areas

Project	Gross Diversion in acre-feet	Net Depletion in acre-feet
Eastern Irrigation District	38,660	19,330
Western Irrigation District	9,133	4,566
Bow River Project	2,480	1,240
Lethbridge Northern Irrigation District	2,300	1,150
St. Mary-Milk Rivers Development	14,615	7,307
United Irrigation District	Nil	Nil
Aetna Irrigation District	Nil	Nil
Mountain View Irrigation District	Nil	Nil
Leavitt Irrigation District	Nil	Nil
Macleod Irrigation District	Nil	Nil
Ross Creek Irrigation District	Nil	Nil
Small Projects	Nil	Nil
TOTAL	67,188	33,593

Certain modifications to the resolution were suddenly presented by the Saskatchewan member at the April 15 meeting that did not receive support from the meeting but the result was that the matter was set over to the September 21 meeting in Winnipeg. At the Winnipeg meeting the Saskatchewan member again obstructed the resolution and consequently prevented any hope of having the resolution receive unanimous approval.

The only conclusion we can arrive at is that the Board has failed to carry out its function. In sharp contrast to the above, reference is made here to a resolution of the Board adopted on October 9, 1953 to give Saskatchewan everything they asked for on the South Saskatchewan River dam at Outlook. At that time Saskatchewan not only received approval of a tentative allocation of 960,000 acre-feet of water for the project but also had their request granted for an understanding that there was sufficient water left in the river for all of the other purposes of the project after all of Alberta's existing and projected consumptive uses of water from the river had been provided for. The tentative allocation and the resolution of the Board regarding available waters for all purposes of the South Saskatchewan River Dam were all approved by appropriate orders-in-council by all the governments concerned.

Alberta has no option now but to take action to protect her water licenses based on our 1963 submission and which was approved in principle by the Prairie Provinces Water Board.

Recent economic studies of our irrigation projects underline the importance of our irrigation projects in the national economy. Failure of the Prairie Provinces Water Board to provide for the consumptive requirements of our projects is a very serious matter.

The original allocations to irrigation in Alberta date back to the turn of the century and were approved by the Reclamation Service of the Department of the Interior nearly half a century before the Prairie Provinces Water Board came into being. These original allocations gave Alberta much more water than we are now requesting.

The Saskatchewan-Nelson Basin Study

The final report of the Saskatchewan-Nelson Technical Advisory Committee was submitted to the Honourable Mr. Strom, Chairman of the Saskatchewan-Nelson Ministerial Committee, in December of 1964.

Under the direction of the Honourable Mr. Strom a meeting was held in Edmonton on September 18 between the members of the Ministerial Committee and the Technical Committee to consider the recommendations of the final report. The report was approved by the Ministerial Committee and motions were passed to implement some of the recommendations contained therein.

It was moved and agreed that the existing Ministerial Committee continue to exist, and consist of two representatives from each of the provinces plus two representatives from the federal government. It was further agreed that a study board be appointed to be composed of one representative from each of the provinces and one from the federal government and that the Ministerial Committee name the chairman, thus forming a board of five members in total.

Alberta proposed that half the cost of the study be accepted by the federal government and that the remaining half be shared equally between the three prairie provinces. This proposal was agreed to by Saskatchewan, however, Manitoba had some reservation as to whether or not they would be financially able to contribute their share. The Minister for Manitoba advised that he would refer the matter to his government for consideration.

At the Premiers' Conference held in Regina on October 14, 1965 Manitoba further confirmed that they considered the financial responsibility beyond their immediate capability.

It was agreed, however, that appointments should be made to the study board and that a further meeting should be held between the board and the Ministerial Committee in an attempt to reach a mutually agreeable method whereby the study could be initiated.

In addition to the Ministerial Committee and the Technical Advisory Committee, those in attendance at the September 8 meeting included the Honourable W. Ross Thatcher, Premier of Saskatchewan, The Honourable E. C. Manning, Premier of Alberta, various Deputy Ministers, administrators and technical advisers from the participating governments.

Members of the Ministerial Committee present were as follows:

Alberta:
- Honourable Harry E. Strom, Minister of Agriculture—Chairman
- Honourable Henry A. Ruste, Minister of Lands and Forests

Saskatchewan:
- Honourable D. T. McFarlane, Minister of Agriculture

Manitoba:
- Honourable George Hutton, Minister of Agriculture

Canada:
- Honourable Arthur Laing, Minister of Northern Affairs and Natural Resources
- Honourable Harry Hays, Minister of Agriculture

INTERNATIONAL CONSIDERATIONS

North American Water and Power Alliance (N.A.W.A.P.A.)

During the year 1965 we again received representations asking that we entertain the idea of diverting part of the flow in our northern rivers. These representations, for the most part, originate in the U.S.A. and are based on erroneous basic information on the hydrology of northern Alberta. They assume that a huge surplus of water exists in the north and this water will continue forever to be wasted to the Arctic Ocean.

The average annual rainfall in much of the northern part of Alberta is 15 to 16 inches. As a result of this meager supply the streams of purely local origin do not have dependable flow.

For a permanent reliable flow this vast area must depend on the Athabasca and Peace Rivers which are advantageously situated with respect to future development. This water will be used for domestic, municipal, industrial, hydro power and other uses including pollution abatement. This water supply constitutes a big attraction to industry and without this the area would languish and die. Our whole northern area is subject to periodic drought conditions.

The nature of a water grant is such that once it is granted is can never be recovered.

One could dwell at length on the effect on the southern part of the province as a result of the butchery of the natural beauty of our country which the construction of N.A.W.A.P.A. would entail. We do not feel that these externally planned schemes have any merit. An attempt will be made to draw us into discussions regarding these schemes with the hope that Alberta will weaken or make concessions. We do not think these discussions should be initiated.

Attention should be drawn to the fact that it is generally recognized that the industrial uses of water will greatly increase in the future. It would be entirely possible for an outside agency to plead for water for pollution abatement or hydro and then by attacking pollution at the source or utilizing nuclear energy in place of hydro the need for the water will cease. By that time the water will be used for industry and could never be recovered by Alberta **for any purpose.**

It may be argued that we could recover our water for the superior uses—domestic, municipal and irrigation, but the superiority of irrigation use over hydro use and pollution abatement can and has been questioned by outside agencies.

It is most important for the future development of Alberta that we should have control over our water resources and we feel that the initiation of PRIME will accomplish this end.

International Hydrologic Decade

Plans for the International Hydrologic Decade in Alberta were expanded during 1965. A meeting of the National Committee was held in Ottawa to review national plans and to bring everyone up to date both internationally and nationally. Two meetings of the Alberta Committee were held in Calgary to plan Alberta's expanded program. From these meetings it appears two problems are hindering the program's development. One is the lack of funds for projects that are considered basic research but are not eligible for National Research Council grants. The second problem is one of publication of data and the results of projects, especially those sponsored by the University and government agencies where no publication policies exist. These problems are under discussion by sub-committees of the Alberta Committee.

The following projects have been approved:

Project	**Sponsoring Agency**
Water Balance Studies—Marmot Creek	Canada Forestry Branch
—Streeter Creek	Canada Forestry Branch
—Lodgepole Pine	Canada Forestry Branch
Forestry Watershed Research—Cache Percotte	Alberta Department of Lands and Forests
Groundwater Budget—Ghostpine	Alberta Research Council
Systematic Sounding of Lakes and Reservoirs	Alberta Department of Agriculture-Water Resources
Watershed Studies in the Rocky Mountain Forest Reserve	Canada Department of Agriculture
Consumptive Use of Water Determinations by Surface Irrigation in Irrigated Rotations	Canada Department of Agriculture
Areal Evaporation—Precipitation Studies	Canada Department of Agriculture
Influence of Drought Periods on Yield and Quality and on Respiration Rates of Tissues of Plants Grown under Irrigation in Southern Alberta	Canada Department of Agriculture
Effect of Soil Volume and Water Content on Water Uptake and Root Development	Canada Department of Agriculture
Changes in Groundwater Chemistry in the Bullpound Creek Basin, Alberta	Alberta Research Council
Geophysical Methods in Groundwater Exploration	Alberta Research Council
Regime Studies of Gravel Bed River	Alberta Department of Agriculture-Water Resources
Regime Study of Lower Red Deer River Alberta	Alberta Research Council
Study of River-Bed Evolution, Red Deer River near Duchess, Alberta	Alberta Research Council
Geomorphology of Lower Red Deer River Alberta	Alberta Research Council
General and Detailed Studies of Regime, Hydraulics and Geomorphology of a number of Rivers of Various Types	Alberta Research Council
Tile Drainage of an Irrigated Glacial Till Soil in Southern Alberta	Canada Department of Agriculture
Reclamation of a Saline Soil by Leaching and Deep Well Pumping	Canada Department of Agriculture
Soil Salinity Control in Evergreen Transplant Plots with Shallow Tile Drainage	Canada Department of Agriculture
Methods of Reclaiming Deteriorated Irrigated Lands	Canada Department of Agriculture
Salinity Study of the Irrigated Soil of Magrath and Raymond District, Alberta	Canada Department of Agriculture
Shallow Groundwater Inventory	Alberta Department of Agriculture-Water Resources
Watershed Basins—Whitemud Creek	University of Alberta
—Baker Creek	University of Alberta
Land Use Basin—Simmonette River	Alberta Department of Forestry
Irrigated Basin—Water Use and Return Flow	Alberta Department of Agriculture-Water Resources
To Study the Long-term Effects of Irrigation Development on Shallow Groundwater as part of the Hydrologic Cycle	Alberta Department of Agriculture-Water Resources

Project	**Sponsoring Agency**
Water Balance Studies in the Whitemud Basin near Edmonton, Alberta	University of Alberta
A Study of Precipitation Network Densities	Alberta Department of Agriculture-Water Resources
Watershed Research, Effect of Changing Land Use on Runoff	Alberta Department of Agriculture-Water Resources

The projects approved represent about 75% of those submitted. Six projects are awaiting approval.

The federal government's Water Quality Section of the Department of Mines and Technical Surveys indicated that it will establish a Water Quality Network this next year in Canada. They also are prepared to study the water quality in any of the research areas which are now being set up under the International Hydrologic Decade.

Plans for a Seminar on Research Watersheds under the International Hydrologic Decade sponsored jointly by the University of Alberta at Calgary and the Alberta Water Resources Branch are underway. The Seminar will be held in Calgary during late April. Formal plans and the date are awaiting the National Committee meeting on the subject.

ADMINISTRATIVE ENGINEERING

Water Rights

A total of 189 applications for water rights were received and recorded in 1965. The distribution of these applications as related to drainage basin and purpose is shown in **Table I.**

A total of 203 Interim Licenses for all purposes were issued during the year.

Irrigation Right-of-Way

Right-of-way plans for the irrigation districts and for other purposes are processed and approved by this office before proceeding to the Land Titles Office for registration. During the year the following right-of-way plans were registered:

St. Mary and Milk Rivers Development	14
Bow River Development	11
Lethbridge Northern Irrigation District	1
Taber Irrigation District	1
Leavitt Irrigation District	1
Magrath Irrigation District	1
Other Purposes	5

The program of micro-filming right-of-way plans continued throughout the year. To date all right-of-way plans for the St. Mary and Milk Rivers Development, Bow River Development (Provincial and Federal Blocks) and the Western Irrigation District have been completed.

Irrigation Water Agreements

Water Agreements between the irrigation districts and the water users are approved, registered and filed in this office.

During the year the following water agreements were received:

Bow River Development	73
St. Mary and Milk Rivers Development	37
Eastern Irrigation District	39

Table II shows the major Irrigation Districts in Alberta and the areas that actually received water during the year 1964.

TABLE I

PURPOSE OF APPLICATION

Drainage Basin	Domestic	Irrigation	Industrial	Other	Total
Athabasca River	3	2	6	......	11
Bow River	13	5	......	......	17
Churchill River	......	......	1	......	1
Great Sandhills	4	......	......	......	4
Lodge Creek	3	1	......	......	4
Manito Lake	2	......	......	2	4
McGregor Lake	2	......	......	......	2
Milk River	3	......	......	......	3
North Saskatchewan River	13	14	2	2	31
Oldman River	7	14	1	1	23
Pakowki Lake	9	......	......	......	9
Peace River	5	......	......	......	5
Red Deer River	13	13	2	3	31
Seven Persons Creek	34	3	......	......	37
South Saskatchewan River	2	1	......	......	3
Sullivan Lake	2	1	......	......	3
Wild Horse Lake	1	1	......	......	1
TOTALS	115	54	12	8	189

Inspection Service and Special Investigations

The year 1965 was one of heavy precipitation and lower temperatures. It was a year which caused flooding along several rivers and streams, ponding on agricultural lands and damage to roads. Furthermore, certain lakes ascended to high levels causing hardship to adjacent property owners, consequently 1965 was a year with above normal requests for investigations of draingae and flood control problems. Requests originated primarily from local governments, groups of farmers and individuals. A total of 376 complaints were investigated by this Branch.

Financial Assistance Policy

To assist local governments in resolving drainage and flood control problems the province provides an appropriation from which, under certain conditions, a grant may be obtained. Through the engineering staff of this Branch engineering service is provided for investigation, design and construction of water control works. The financial assistance program to local governments continued to grow in scope and magnitude and the following tabulation summarizes the yearly expenditures on this program. A tabulation showing a complete list of projects together with the engineering assistance given is contained under the heading "Design and Construction" of this report.

Fiscal Year	Total Paid
1954-55	$ 2,449.42
1955-56	10,566.19
1956-57	46,833.51
1957-58	54,616.48
1958-59	61,131.28
1959-60	31,130.95
1960-61	29,353.33
1961-62	21,554.24
1962-63	61,056.04
1963-64	107,243.07
1964-65	178,718.19
1965-66	68,985.19 (as of Dec. 13, 65)
TOTAL	$673,637.89

Drainage Districts

The total number of drainage districts remained unchanged. There were nine drainage districts in the province and collectively they constituted a total area of 189,200 acres of which 75,647 acres received direct benefit. Some financial assistance for maintenance programs was provided under the financial assistance policy.

HYDROLOGY

General

A basic program of compilation, utilization and dissemination of hydrologic information remains fairly uniform year after year with periodic additions and/or changes in emphasis. In this latter category the following activities were quite significant:

1. Flood Warning.

   A sharply increasing demand for daily estimates of flooding probabilities and an increase in the number of meteorological and hydrometric stations that provide basic data for this purpose, plus a heavy snowmelt runoff followed by a wet spring, combined to keep many members of the Water Resources staff busy for weeks.

2. Watershed Research.

   A good start was made on access road building and hydrologic instrumentation of a 40 square mile stream basin in virgin country south of Sturgeon Lake.

   The objectives of this practical study on the effect of changing land use on runoff are:

   A. To record and attempt to explain the effect of agricultural development on the runoff and erosion characteristics of land presently under forest cover.

   B. To develop recommended patterns of land development and water control based on:

      (a) its effect on runoff and, in turn,

      (b) these effects of the changing patterns of flood magnitude and duration and water availability on agricultural potential and on the carrying capacity of ditches, bridges and streams.

   C. To contribute to hydrological knowledge and, in particular, to the International Hydrologic Decade.

Hoped for benefits include the following:

A. Documentation of information which will provide a useful guide to probable runoff characteristics in developing areas.

B. Provision of information necessary to planned development of virgin and partially developed land from the aspect of water resources management.

C. Provision of a large scale laboratory in which the benefits from a soil and water conservation standpoint of various types of land management may be observed and compared.

3. River Regime Studies.

Our continuing summer program of river surveys received a forceful impetus with the importance placed on this type of study by the International Hydrologic Decade, a creation of UNESCO. These surveys are conducted for the purpose of determining those characteristics of our rivers which must be known before effective control measures (such as diversion or damming or dredging, etc.) can be taken.

In line with I.H.D. recommendations that useful information be circulated, survey results are being compiled into a form fit for publication.

Precipitation

In Alberta 1965 was a wet year with all regions except the north Peace and the Drumheller-Coronation area recording precipitation considerably above normal, particularly during the summer months. A very widespread series of heavy storms in the latter part of June dumped more than four inches of rain over most of the agricultural land in the province and began a wet season that did not end until October. This warm dry month (except in the Peace River area) allowed harvesting operations, stalled by cold wet September weather, to be completed.

The excessive precipitation was responsible for high river flows. For example, the total yearly flow of the North Saskatchewan River at Edmonton was one of the heaviest ever recorded. During the period April-May the discharge was 73% above normal.

The following is a list of precipitation totals and their comparison to normal values for the various parts of Alberta.

TABLE II
PRECIPITATION IN INCHES

	1965 Precipitation			Difference from Normal		
Stations	April, May June	April, May June, July	October/64-September/65	April, May June	April, May June, July	October/64-September/65
Peace River	2.6	3.4	12.3	—1.1	—2.5	0.1
Fairview	6.2	6.5	16.4	1.5	0.8	—1.4
Edson, Rocky Mountain House	10.3	16.9	29.0	3.3	6.6	8.0
Beaverlodge, Grande Prairie, Whitecourt, Wagner	7.9	11.1	23.5	3.0	3.3	5.5
Athabasca, Lac La Biche, Elk Point, Meanook	8.0	10.1	21.3	2.6	1.8	3.5
Campsie, Sion, Edmonton, Calmar, Wetaskiwin	10.1	12.2	22.8	3.7	2.8	4.4
Vegreville, Vermilion, Lloydminster, Viking, Ranfurly, Hughenden, Camrose, Sedgewick	9.1	11.0	19.7	4.2	3.4	3.9
Lacombe, Penhold, Olds, Stettler, Three Hills	8.1	10.5	21.3	1.6	1.8	4.5
Calgary, High River	9.4	13.3	24.1	2.3	4.0	5.8
Claresholm, Ft. Macleod	7.5	9.3	20.2	1.0	1.4	3.4
Pincher Creek, Cardston, Raymond, Carway, Lethbridge	9.7	11.7	23.2	2.7	3.2	4.9
Vulcan, Gleichen	10.4	11.9	20.9	5.0	4.9	5.9
Vauxhall	7.5	11.2	22.0	3.0	5.2	8.9
Suffield, Foremost, Medicine Hat, Brooks	7.1	8.2	17.0	3.0	2.8	3.2
Drumheller, Hanna, Coronation	4.4	7.0	14.7	0.3	0.3	0.7

GROUNDWATER

General

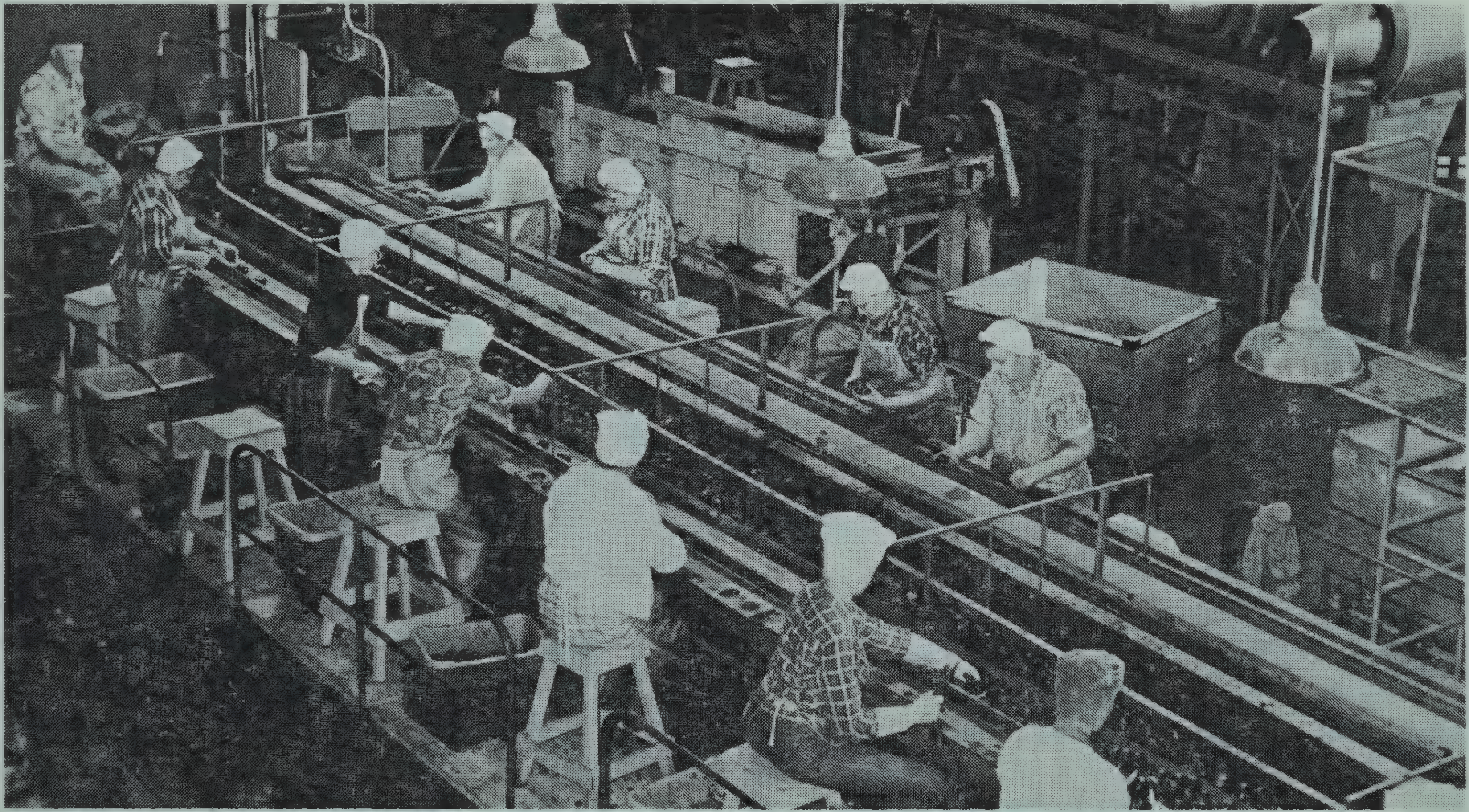
The principle function of the Groundwater Division involves the licensing of all water well drillers in the province and the collection and tabulation of well drilling report forms. Other duties carried out by the Division include field inspections in connection with proposed subdivisions, flowing wells, complaints, well drillers, industrial wells and municipal well development programs. Levels are also taken and recorded of all the major lakes as well as sonic soundings to establish depths and storage capacities.

During the year 519 personal contacts were made with water well drillers in an effort to improve the quantity and quality of water well report submissions. All of the data collected were supplied to the Research Council of Alberta to aid in their studies pertaining to groundwater evaluation.

Water Well Drillers

The following summary is compiled from information gathered during the past year relative to the water well drilling industry:

Number of licensed water well drillers	233
Full time	94
Part time	74
Occasional	57
Out of business	8
Number of drilling rigs	282
Rotary	123
Cable tool	87
Boring	30
Jetting	42
Number of drilling reports received	2,020



Processing Beets at Cornwall Canning Plant, Taber, Alberta, 30 miles east of Lethbridge

A directory was published of all licensed water well drillers in the province listing their names, addresses, the number and type of machines employed by each and indicated those who are members of the A.W.W.D.A. The directory was distributed to each driller and all district agriculturists, plus many other interested people such as commercial firms and other government offices.

During the Annual Water Well Drilling Association Convention in Red Deer an hour long presentation was given in the interests of education and better public relations.

Lake Bed Surveys

During the past summer ten lakes were sounded with the sonic sounding equipped boat. This brings the total to 70 lakes and 11 reservoirs completed. This information is drafted onto contour maps which are useful in assessing the storage capacity in the interests of water conservation, recreation and industrial purposes.

Lake Levels

The level of most lakes in the province showed an increase ranging from one-half foot to two and one-half feet. Lac Ste Anne rose 2.43 feet on the average and caused some damage and inconvenience to landowners along the shore. Gull Lake recovered approximately one foot which is encouraging considering its long history of decline. Lesser Slave Lake is another example of increased water levels.

The following list of some of the major lakes show a comparison of 1965 median levels with those of the past four years:

	1961	1962	1963	1964	1965
Gull	90.29	89.67	89.33	89.16	90.24
Sylvan	72.55	71.77	71.77	71.42	72.32
Cooking	96.29	96.20	96.68	95.91	96.46
Buffalo	84.57	83.50	83.60	82.45	84.07
Wabamun	70.53	70.72	70.87	70.57	72.52
Pigeon	99.51	99.28	99.26	99.11	100.26
Lac Ste Anne	97.14	97.35	98.20	97.37	99.80
Lac La Biche	97.82	98.74	97.66	95.48	97.48
Lesser Slave	90.64	92.48	93.59	94.77	96.33

CONSERVATION AND DEVELOPMENT

General

The duties of this Division are to present new proposals and conduct investigations which would promote conservation and development of our province's water resources. However, for this Division to present a report on any project it is necessary to co-ordinate the work of other divisions whose aid and recommendations are essential for a sound engineering report.

South Saskatchewan Basin

1. Stimson Creek.

Investigations were continued and of the eight sites originally intended to be investigated, two sites have been discarded, four sites are 80% complete and two sites are 100% complete. It will be necessary to investigate one new site since the contour maps indicate that extreme difficulty will be encountered in locating the canal route from the Sheppard Creek dam to the Chain of Lakes dam.

2. Jumping-pound Creek.

Nearly every year a water shortage problem exists in the irrigation districts which use the Bow River for a water supply. In order to alleviate present and future water shortages it was essential that studies of possible reservoir sites on the Jumping-pound be commenced. Ground control has been established and a preliminary geology report prepared.

3. Barons-Peacock.

A serious erosion problem exists in the area northeast of Barons. Contour maps of this area are being prepared in order that we may determine possible storage sites where excess stream discharges may be stored.

4. Pakowki Lake.

Fluctuations of lake levels due to wind action and precipitation have affected residents along the Pakowki Lake shoreline. Contour maps of the shoreline are being prepared in order that we may determine areas subject to flooding.

Red Deer River Basin

1. Red Deer River.

A new proposal has been suggested for supplying water to eastern Alberta. Presently investigations are progressing to determine the feasibility of this proposal which entails one major and one minor dam on the Red Deer. The major dam is located approximately 12 miles upstream from Sundre and will give complete flood control for the Town of Sundre, and stream flow regulation for the entire Red Deer River. The minor dam is located approximately 15 miles downstream from Ardley and could be built high enough so that it would be economical to develop power and pump water into the highline canal.

2. Klein Lake.

Construction on this project was completed and reservoir was partially filled by the fall of 1965.

3. Bearberry Creek.

Investigations are continuing on the preparation of a proposal which may alleviate flooding conditions on the Bearberry at Sundre. The present proposal consists of creating storage in the headwaters and channel improvement in the lower reaches.

4. Beaver Creek.

Investigations have been completed on this project and final plans are being prepared by the Design Division. An A.R.D.A. proposal was presented and has been accepted by the federal government.

5. Gull Lake.

Receding water levels on this lake necessitated investigations to determine means of stabilizing the lake level. The Technical

Division of the Department of Lands and Forests are preparing contour maps of the adjoining drainage basins in order that it can be determined if it is possible to divert new water into Gull Lake.

North Saskatchewan Basin

1. Battle River.

Feasibility studies are progressing in a proposal which would conserve water flows in the Battle River. This proposal suggests that a small dam be built in 36-43-25-4 in order that flows in the Battle River above riparian requirements could be diverted and stored in Red Deer Lake for release back into the Battle River or Meeting Creek during periods of low flow. In addition to these benefits water could also be diverted by canal into Buffalo Lake.

2. Clearwater River.

Consulting engineers are conducting investigations into the feasibility of constructing dams at either the Gap or Idlewilde locations. The Clearwater River, due to its geographic location, is of utmost importance since it can be used for augmenting flows in the North Saskatchewan River or diverting water southward according to our provincial water development plan 'PRIME'.

3. Swan Lake.

Preliminary investigations have been completed on one of the two proposed sites and foundation conditions have been found to be unsuitable for dam construction. Drilling will be completed on the lower site during the winter of 1966.

4. Ram River.

Ground control has been established and the Technical Division of the Department of Lands and Forests are preparing contour maps of the area.

Athabasca Drainage Basin

1. Pembina River.

A consulting firm was engaged to prepare a report on the feasibility of constructing a dam near Evansburg. A dam at this location would eliminate the majority of floods which occur on the Pembina and would permit diversion of Athabasca water to the North Saskatchewan, as outlined in 'PRIME'.

2. Athabasca, McLeod, Wildhay and Berland Rivers.

Consulting firms investigated storage reservoirs in the Athabasca basin above Fort Assiniboine. Of the various sites investigated the McLeod River site appears to be the best.

3. Piche River.

Investigations are continuing on determining the possibility of constructing a reservoir on the Piche River immediately downstream from Piche Lake. A reservoir at this location would aid in stabilizing the level of Lac La Biche.

Aerial Photography

A program was started during the past year to obtain air-photo coverage of all streams which cause major damage during high flows. Some of the rivers and streams which were photographed while the flood was at its crest were. Red Deer River, Pembina River, Paddle River, McLeod River, Sturgeon River, Dapp Creek and Vermilion River.

CONSTRUCTION AND DESIGN DIVISION

This Division was responsible for all construction and design activities of this Branch. The following tabulations summarize the projects which were initiated under the financial assistance program to municipalities and projects which were wholly a provincial responsibility. In addition, due to the abnormally wet year, 59 projects are either in the design stage or awaiting completion of surveys.

A total of 241 drawings were completed during the year.

Summary of Projects Initiated under The Financial Assistance Policy in 1965

Project	Purpose	Municipality or L.I.D.	Percentage Completed in 1965
Hawk Hills	Flood Control	I.D. 138	100
Hotchkiss Drain	Drainage	I.D. 138	100
Buchanan Creek	Flood Control	I.D. 138	100
Hines Creek	Flood Control	I.D. 139	100
Chocolate Creek	Drainage	M.D. 136	100
Briere Complaint	Drainage	M.D. 130	100
Gunn's Creek	Drainage	M.D. 130	100
Pat's Creek	Drainage	Town of Peace River	100
Teepee Creek	Flood Control	County 1	100
Valhalla	Flood Control	County 1	50
Bear Creek	Flood Control	City of Grande Prairie	40
Wapiti River	Erosion		0
Chalus Spillway	Drainage	M.D. 133	100
Kistuan	Flood Control	I.D. 134	85
North Tangent	Drainage	I.D. 132	50
Jack Fish Creek	Flood Control	M.D. 87	100
Cold Lake Erosion	Erosion	Town of Cold Lake	30
Muriel Creek-Charlotte Lake	Flood Control	M.D. 87	90
Franchere Lake	Flood Control	M.D. 87	100
Upper Therien Lake	Flood Control	Town of St. Paul	100
Round Hill	Flood Control	County 9	100
Cameron Drainage District	Drainage		95
Big Hay Lake Drainage District	Drainage		100
Reita Lake	Flood Control	I.D. 101	100
Reita Creek	Flood Control	I.D. 101	100
Manatokan Lake	Flood Control	M.D. 87	100
Chipman Drain	Drainage	M.D. 82	100
Bear Creek	Flood Control	M.D. 92	75
Tawatinaw Creek	Flood Control	M.D. 92	100
Dapp Creek	Flood Control	M.D. 92	67
Hall Complaint	Drainage	M.D. 92	100
Open Creek	Conservation	Rimbey Fish and Game	95
Bear Lake	Conservation	M.D. 92	100
Bolloque Lake	Conservation	M.D. 92	100

Summary of Provincial Projects

Project	Purpose	Location	Percentage Completed in 1965
Willow Creek	River Protection	I.D. 27	100
Klein Lake	Conservation	I.D. 50	95
Sundre (Red Deer River)	River Control	County 17	50
Whitemud River	Flood Control	I.D. 138	100
East Prairie River	Flood Control	I.D. 125	80
Pembina River	Flood Control	M.D. 92 & C. 11	80
Thunder Lake	Conservation	County 11	95
Buck Lake	Flood Control	County 10	50

WATER POWER

North Saskatchewan

The Brazeau Dam was officially completed on April 15, 1965 and since that time has produced power. The turbine presently in operation has a rated capacity of 150,000 kilowatts. The number two unit presently under construction will be in operation in the fall of 1966. This unit will have a rated capacity of 190,000 kilowatts.

The year 1965 has had extremely high runoff in this area and the natural flow of the North Saskatchewan River without the Brazeau storage would probably have maintained the desired minimum of 2,000 cubic feet per second at Edmonton.

The Big Horn Site topography has been completed and it now appears that the most economical elevation would be 4,335 geodetic and would provide a storage capacity of 1,112,000 acre feet. This is a very important upstream storage project and although timing for construction has not been settled it is being given careful consideration and more information in this regard should be available early in 1966.

Diversions from the North Saskatchewan to the Brazeau by way of Chambers Creek have also been studied and these surveys are also being considered as to time and economic study.

Bow River

Extension to the Ice Pack Anchorage below the Louise Bridge in the Bow River, Calgary, was completed in the spring of 1964. In the winter of 1964-65, due to the Brazeau not being completed and trouble with the large unit at Wabamun, the Bow plants carried extremely heavy loads. It would appear that partly due to the Ice Pack Anchorage no serious problems were encountered in Calgary. However, there is some extremely low land in Montgomery that did have slight flooding. It would appear that this area should be restricted to parkland.

Athabasca River

Extensive oil development has taken place in upper Lesser Slave River basin and some consideration is being given to limit, as far as possible, installations that could make the Mirror Storage Development difficult.

A study was conducted of the outlet to Lesser Slave Lake by Montreal Engineering as to the cost of lowering the lake to a more stable level. The present high water level has been caused by a series of wet years. The difficulty is basically encroachment that took place in a long period of dry years. If 1966 is a wet year the lake level could rise again.

Peace River

A dam site one and one-half miles above Dunvegan Bridge was drilled in February 1965. Core samples were obtained by the consulting firm of Bernard and Hogan who carried out extensive tests. Indications are that this site is a possible dam site.

However, foundations are only the start of this study and further investigations are required to establish sources of material, sizes of spillway required and all power possibilities. Then of course, an estimate of economics and timing will be necessary.

Vermilion Reservoir

In spite of a very heavy runoff no serious problems were encountered. The Power Company does not require as much water for their gas turbine as they did for the steam unit therefore it is possible that for their purposes the dam could be removed. On the other hand, contrary to some opinions, we do not believe this will help the farmers as much as they expect as it would not appear that their problem is any worse than before the structure was installed. Removal of this dam would be a serious loss to the Town of Vermilion as a recreation centre and water supply.

International Streams

There has been a considerable change all along the international boundary. A very dry cycle appears to have ended and some portions of the area were flooded. Although flooding caused some losses, grass in the area was heavier than it has been for several years.

Starting with Sage Creek, this stream flooded on several occasions in 1965. In July a considerable amount of land was still under water and most of the roads in the area were out of service due to rain. This situation indicated the inability of Sage Creek to handle high flows. The problem of low flows reaching the Montana ranchers has been demonstrated in the past four years. The conclusion could be that in order to operate a trouble free creek at any time requires major work to be done.

The solution to the Sage Creek problem is not a simple one. Canalizing the creek would destroy willow trees considered to be essential by the ranchers. New structures are needed and a high degree of co-operation by land owners on both sides of the boundary is essential in both wet and dry years.

Deer Creek and the South Fork of the Milk River experienced higher flows and no complaints were received.

Dugouts and small reservoirs that were dry or nearly dry in 1964 were full in 1965.

The following Table summarizes the major dams in Alberta:

MAJOR DAMS IN ALBERTA (1965)

Name	Purpose	Effective Head	Height	Length of Crest	Cubical Contents (c. yds.)	Storage ac. ft.	Year Built	Power Output H.P.	Owner
Horseshoe	Hydro	72	73			Pondage	1911	24,360	Calgary Power
Kananaskis	Hydro	72	60	680	22,000	Pondage	1913	24,000	Calgary Power
Ghost	Hydro	110 to 75	80	2,018	778,000	73,500	1929	67,450	Calgary Power
Cascade	Hydro	345 to 330	112	2,020	850,000	180,000	1942	46,000	Calgary Power
Upper Kananaskis	Hydro	125 to 75	70	1,420	307,000	100,000	1943	6,900	Calgary Power
No. 4 Saddle Dam	Hydro		65	420	66,000	......	1943	Part of Upper Kananaskis	Calgary Power
Barrier	Hydro	150 to 120	140	3,500	1,038,000	20,000	1947	13,500	Calgary Power
Spray	Hydro	900	185	640	1,200,000	330,000	1951	190,600	Calgary Power
Three Sisters	Hydro	65 to 25	48	2,200	350,000	......	1951	3,600	Calgary Power
Goat Pond	Hydro		35	3,000	219,000	Pondage	1951	......	Calgary Power
North Whiteman	Hydro		65	550	76,000	Pondage	1951	......	Calgary Power
Bearspaw	Hydro	50	70	1,250	256,000	Pondage	1954	22,000	Calgary Power
Pocaterra	Hydro	215 to 170	90	2,000	229,000	53,000	1955	18,500	Calgary Power
Brazeau	Hydro	395	211	3,750	4,100,000	440,000	1962	210,000 630,000 (ult.)	Calgary Power
Brazeau Dyke	Hydro			68,290	5,400,000	15,000	1963		Calgary Power
Bassano	Irrigation		65	7,900	181,000	Pondage	1914	......	Eastern Irrigation District
Glenmore	Municipal W.S.		80	3,400	......	22,740	1933	......	City of Calgary
Berry Creek	Irrigation		52	1,400	200,000	30,000		......	P.F.R.A.
Heart River	Multi-purpose		40	1,800	48,000	50,000		......	Province of Alta.
Travers	Irrigation		145	3,000	3,360,000	260,000	1954	......	P.F.R.A.
East Ridge	Irrigation		41	2,500	761,000	80,700	1957	......	P.F.R.A.
North Ridge	Irrigation		76	1,400	1,268,000	......	......	......	P.F.R.A.
Waterton	Irrigation		178	3,000	5,500,000	140,000	1965	......	P.F.R.A.
St. Mary	Irrigation		195	2,536	4,500,000	320,000	1951	......	P.F.R.A.

IRRIGATION

The number of acres receiving water from year to year continues tor increase. The following table indicates the number of acres irrigated in the various districts for 1964. As noted in previous reports, figures for current years are not available until after the annual report has been compiled.

STATISTICS IN CONNECTION WITH MAJOR IRRIGATION DISTRICTS IN ALBERTA

Name of District	Constructed Area	Receiving Water in 1964	Source of Supply
St. Mary-Milk Rivers Dev't.	186,046 ac.	170,000 ac.	St. Mary River
Magrath Irrigation District	8,506 ac.	7,500 ac.	All through the works of the S.M.M.R.D.
Raymond Irrigation District	20,893 ac.	18,000 ac.	
Taber Irrigation District	39,015 ac.	39,015 ac.	
Western Irrigation District	150,000 ac.	24,000 ac.	Bow River
Eastern Irrigation District	200,000 ac.	193,381 ac.	Bow River
Bow River Dev't. (Federal)	96,000 ac.	70,067 ac.	Bow River
Bow River Dev't. (Provincial)	25,000 ac.	15,967 ac.	Bow River
Mountain View Irr. District	3,719 ac.	2,789 ac.	Belly River
Leavitt Irrigation District	4,511 ac.	4,511 ac.	Belly River
Aetna Irrigation District	6,672 ac.	2,523 ac.	Belly River
United Irrigation District	33,972 ac.	19,376 ac.	Belly River
Lethbridge Northern I.D.	91,000 ac.	70,575 ac.	Oldman River
MacLeod Irrigation District	Not Operating		Oldman River
Ross Creek Irr. District	2,069 ac.	200 ac.	Gros Ventre Creek
TOTALS	867,403 ac.	637,904 ac.	

Three-way Agreements

The year 1965 found completion of agreements with the following:

(a) Provincial Government, the L.N.I.D. and the County of Lethbridge

(b) Provincial Government, the T.I.D. and the M.D. of Taber

(c) Provincial Government, the E.I.D. and the County of Newell

(d) Provincial Government, the B.R.D. and the M.D. of Taber

(e) Provincial Government, the S.M.R.D. and the M.D. of Taber

(f) Provincial Government, the S.M.R.D. and the County of Lethbridge.

This program was initiated in 1964 to resolve certain drainage problems within irrigation districts and which were affecting municipal road building programs.

In addition to the above agreements, an agreement between the provincial government, the Raymond Irrigation District and the County of Warner was also drafted but there was some delay in executing this agreement because of the legal implications which could arise out of drainage of the Stirling Lake area into Etzikom Coulee and Pakowki Lake and the County is very dubious of entering into this agreement at the present time. An agreement was also drafted between the provincial government, the Magrath Irrigation District and the Municipal District of Cardston. The M.D. of Cardston is prepared to enter into this agreement. In connection with all of the above three-way agreement drainage proposals the following is a summary of the work carried out by survey crews and office staff in working from the Lethbridge office.

One four-man survey crew and one draftsman were employed throughout 1965 in the Lethbridge area. During the summer season an additional two crews were employed on field surveys for proposed surface and outlet drainage in the Raymond, Magrath and Lethbridge Northern Irrigation Districts. The work consisted of 75 miles of precise levelling to establish bench marks, 145 miles of traverse and field profiles of drainage lines throughout these areas. These additional surveys resulted in the completion of our survey program of proposed surface and outlet drainage in the three irrigation districts.

Final cross-sections, surveys and design were completed on the Battersea Drain project during the summer months. A contract was prepared and construction began in September. Work was also done on surveys and design of an outlet structure into the Oldman River.

In co-operation with the Colonization Branch a drainage study of the Eastern Irrigation District for the Irrigation Policy Committee was undertaken. An estimate of construction, maintenance and operation costs of outlet drainage was prepared. One survey crew was employed during the summer to establish bench marks (30 miles of precise levelling) and obtain profiles of problem areas (50 miles of profiling). Surveys were also made for eight miles of road drainage within the County of Newell.

Engineering and survey assistance was again provided to the Raymond, Magrath and Lethbridge Northern Irrigation Districts on several lateral and drainage problems.

Further surveys and design were undertaken for the proposed trunk drain in the Raymond Irrigation District. Some investigational work, surveys and design was done on the Malloy Drain during the 1965 season. Surveys and design work were carried out for the construction of a tile drain at Wilson, two interceptor drains in the Readymade area and canal relocation and extension at Cranford.

Assistance was provided in the form of surveys and engineering advice for four drainage disputes, two in the Lethbridge Northern Irrigation District and two in the Lethbridge Coaldale District.

Throughout the year engineering design, plans, profile and cost estimates were prepared on all major construction proposals throughout the St. Mary and Milk Rivers Development project.

Right-of-Way and Compensation Work

This phase of our construction, organization and work schedule is getting to be a very important and vital aspect of our total construction set-up in the south. Fieldman and right-of-way buyers attempt to resolve seepage, right-of-way and other problems connected with irrigation development and construction relative to the St. Mary and Milk Rivers Development and Bow River Development. Some of the work was done in connection with the Battersea Drain and projects under the three-way agreements. Right-of-way personnel were also called upon to appraise lands on projects proposed to be developed under the Alberta water plan P.R.I.M.E. This work amounted to 210 field inspections resulting in the finalizing of 670 contracts with individual landowners plus initiating 440 contracts which were not finalized for various reasons.

St. Mary and Milk Rivers Development

Another very successful year of construction was experienced in 1965. After taking into account the severe weather conditions which were encountered throughout the year, time and equipment were utilized to great advantage in construction work. The first part of the year was very cold and there was a considerable amount of snowfall in the spring. Heavy rainstorms were experienced in July and August was a very good month for construction with warm dry weather. In September, however, more rain hampered construction operations and November was a month filled with snow and cold weather. The following is a summary of the construction work completed in the various phases and types of construction:

1. Canal Lining.

During the 1965 season construction crews completed 17.4 miles of polyethylene canal lining. This work was done in canals with bed widths from 2 to 8 feet. In addition three miles were prepared for receiving polyethylene lining in the spring and an additional two miles were built up with wide banks in preparation for the over-excavation work. This work represents the greatest amount of lining that has been installed in a single year.

2. Canal deepening and relocation.

This was an exceptionally good year for this type of work. 2.6 miles of laterals were deepened to get the canal beds down into better material and in this manner overcome seepage problems of these canals. In addition to this deepening, 7.2 miles of canals were relocated along section and quarter section lines shortening up sections of canal in various locations. This was also done in connection with control of seepage from irrigation canals. With regard to canal deepening and relocation, additional work was involved in moving road crossings, rebuilding of lateral turnouts and farm turnout structures and installing of new precast concrete checks and check drops.

3. New Canal Extensions.

Six miles of new laterals for the purpose of bringing new areas and lands under irrigation were constructed. Most of these new canals had bed widths of two, three and four feet. Included in this canal extension work was the completion of the Taber Northwest Extension which was started in the fall of 1964. The total of these extension canals including the work involved in the Taber Northwest Extension will bring an additional 1,980 acres into the irrigation project. Included in this work is one new main canal turnout structure south of Grassy Lake.

4. Tile Drains.

Eight new tile drains have been constructed and put into operation during the 1965 construction year. The tile sizes used varies from 6 to 12 inch diameter and all of this work was done with vitrified glazed clay tile bell and spigot type. To the end of December 5.1 miles of tile drain complete with backfill, wells, ladders and lids were installed.

5. Open Drains.

Because of other work and not being able to hire sufficient and proper equipment it was impossible to complete all of the open drains which had been approved by the Drainage Committee. However, 11 miles of open drain were completed by Water Resources crews during the season. In addition to this the County of Forty Mile completed 4½ miles of open drains in connection with road construction. The M.D. of Taber constructed two miles of open drainage with regard to road construction and the County of Newell constructed three miles of drainage in connection with their road construction program. This work, in connection with these three municipal bodies, was done under the supervision of the Water Resources organization and in conjunction with the new three-way policy agreement.

6. Underground Pipe Lateral.

A new type of construction to alleviate and prevent seepage from canals was undertaken. This is the first undertaking of this nature in the province in connection with irrigation work. South of Medicine Hat 1,750 lineal feet of 18 inch round tongue and groove concrete pipe with concrete mortar joints in a section of canal was installed. This was located about two miles south of Medicine Hat and a depth of cut on this was up to 13 feet. This 1,750 lineal feet of pipeline replaced 4,500 lineal feet of lateral which had circled around a hill and which had been previously approved for seepage control. The cost of this work was $3.80 per lineal foot. Besides improving water control, better seepage control and easier operation as a result of this work, an additional 3 to 4 acres of land were reclaimed for farming. Southeast of Purple Springs, in conjunction with the S.M.R.D. operation and maintenance organization, 478 lineal feet of 18 inch corrugated iron pipe was installed to give additional seepage control on a portion of this canal. During the month of December 370 lineal feet of 36 inch tongue and groove concrete pipe was installed on the Taber to Fincastle Drain which is now under construction.

7. Chin Bridge.

During an inspection of the Chin Bridge in January it was found that a number of the bearing plates had broken loose from the welds of the girders and considerable movement had taken place in some of these girders and had created a very dangerous condition. After consultation with the consulting engineers who had designed the bridge, remedial works were installed. Two-thirds of the total repair work was completed before the ice went out on the lake. There are seven piers to be finished up in this work.

8. Miscellaneous.

Fifty precast concrete structures were installed in the past year throughout the S.M.R.D. project area. Thirty-five lateral and canal turnout structures were installed in various canals throughout the project. Five pile bridges were built over the Bow Island Drain; four drainage jobs were undertaken under the three-way agreement, as mentioned in item No. 5, and one project was supervised under a fifty-fifty agreement arrangement between the provincial government and the County of Forty Mile in building up an access road across the Forty Mile Coulee Lake problem.

To assist in all of the above work, the following is a list of the surveys which were carried out by the survey crews stationed at Grassy Lake: A total of 651 miles of surveys were carried out including items such as chainage, traverse, profile and construction surveys. Fifty-four miles of this work was done in the Eastern Irrigation District in connection with the drainage surveys under the conditions of the three-way agreement. Ten miles of survey were carried out in the Taber Irrigation District in connection with the three-way agreement with the M.D. of Taber and 67 miles of road and drainage surveys were carried out in the County of Forty Mile also in connection with the three-way agreement. The survey crews also completed one and one-half sections of topography or planetable surveys in the area north of Taber.

In addition to the above, various meetings have been attended during the past year such as Irrigation Policy Committee meetings, Drainage Committee meetings, Alberta Irrigation Projects Association meetings, meetings with County and Municipal Councils and Irrigation District organizations.

Bow River Development

A good construction year was experienced on the Bow River Development western block. With fine co-operation between the farmers most concerned, the B.R.D. operation and maintenance staff and the Water Resources staff it was possible to advance the work with reasonable dispatch without disrupting irrigation service appreciably. The bulk of the work done was on canal seepage control work and on the main drainage outlet from Lost Lake. This lake received natural and irrigation runoff from about two-thirds of the area serviced and has no natural outlet.

Seepage control measures undertaken in the year's program were designed either to prevent seepage or to intercept it just outside the canal and thus prevent land damage. To prevent seepage, 11,000 feet of canals were lined with polyethylene plastic. Another 4,000 feet of ditches were over-excavated ready for placing plastic and another 2,600 feet had banks widened so the over-excavation could be done. Where it was deemed feasible, about 3½ miles of ditch deepening was done to lower the water into less pervious soils. Lining work can only be done during very limited times, either before or after the irrigation season while the frost is out of the ground. A much better run would be possible if this work were done before ditches were put into service but in many cases the need is not anticipated and does not show up until several years of operation are completed. Interception and outlet drainage can be done all season.

Approximately 18 miles of interception drains and outlet drains were constructed. The outlets are designed to handle surface drainage and to serve as wasteways to allow flexibility in ditch operation and thus serve more than a seepage control function. About 194,000 cubic yards of excavation were involved in these drains. The 3,500 feet of tile interceptor drains installed last year were backfilled this year.

Connected with the Lost Lake job were 125,000 cubic yards of drain excavation and 42,000 cubic yards of borrow pit excavation. There were 52,000 cubic yards of ditch fill mainly above the proposed pump lift, 22,000 cubic yards of road fill where the rising water threatened to inundate a district road and 8,000 yards on a fill which provides access to a gas well which was flooded by the lake. Eight hundred cubic yards of crushed gravel were used to re-gravel the road.

In distribution work 15 farm turnouts, 2 lateral turnouts and 2 timber bridges were constructed. About 9,000 cubic yards of fills were constructed to raise the delivery for increased irrigable acreage on two parcels. 9,200 lineal feet of abandoned laterals were backfilled.

Appertinent to the drainage and distribution works it was necessary to install 2,266 feet of corrugated pipe, 34 Texas gates, 37 Precast structures, one concrete and pipe gate structure and one pump well for interceptor drainage. Eight and one-half miles of fence were removed and rebuilt. A railway ditch crossing was built. Eighteen concrete structures were precast and 52 steel Texas gates were fabricated and concrete footing beams cast for these. For rip-rap 530 cubic yards of pit run gravel and 1,540 cubic yards of field stone were hauled.

Survey work associated with this and future construction consisted of 116 miles of transit line and 191 miles of levels.

Men and equipment from Enchant were used for construction and maintenance work on the Mountain View-Aetna Canal as needed.

Mountain View-Aetna Main Canal

The Belly River diversion and main canal supplying water to the Mountain View, Leavitt and Aetna Irrigation Districts were operated and maintained by the Water Resources Branch again in 1965.

With adequate precipitation for a large part of the growing season irrigation demand was much less than normal. It reached negligible proportions at times and served mainly as a stock-watering scheme during these periods. Peak use occurred after the haying season and again considerable amounts were used in the late fall.

The districts served by this canal do not lend themselves to intensive irrigation farming. This is so because of the short growing season and the very rough topography. Some years there is little need for irrigation. These factors tend to make irrigation less than feasible. However, irrigation's contribution in dry years and the insurance it provides the livestock economy of the area is considerable. This contribution justifies the relatively low cost of construction and maintenance of these works but it would not justify service to land much more remote or more difficult to service.

Before the irrigation season it was necessary to clean about one mile of canal because of slides, the burrowing of muskrats or trampling of livestock. After the water was shut down in the fall a start was made on replacing Lee Creek Syphon. This syphon is the first of four woodstave pipes along the canal between the Leavitt and Aetna Districts. It will be completed before the irrigation season in 1966. During the season one new farm delivery was installed. Repairs were made on two timber chute drops and five timber bridges and erosion damage repaired at five locations.

Driggs Lake reservoir was kept nearly full all season as Belly River flow was ample for any diversion required to keep it that way. Reservoir level usually falls a few feet in the winter because a small flow is turned out to Mami Creek while diversion from the river is shut down.

DISTRICT OFFICES

Calgary

This year has been a year with above normal rainfall, especially during the growing season. June with a total of 6.69 inches at Calgary was the monthly seasonal high. This is 3.24 inches above the normal.

The heavy snow pack in the mountains early in the spring gave every indication of an extremely high and dangerous runoff condition. Cool dry weather during May and early June prevented the high flows from occurring and as a result we had periods of above normal flows with very little flooding. The high flows continued throughout the summer causing considerable erosion along the stream channels. In the prairie areas the runoff was extremely high and resulted in many problems.

The Cypress Hills area had an extremely heavy runoff and as a direct result there was no water shortage problems in the Manyberries area. The Special Areas had a high runoff year and no shortages of stock water occurred. In the Middle Fork reservoir there was surplus water at the end of the season as Saskatchewan released water to fill Simm's Lake for use on the Bedford Slough area in Alberta.

On the International streams in the Cypress Hills area the flows were high and no problems occurred with releases.

Project investigation continued to increase although during the past season they were generally directed to erosion protection and drainage. Complaints were generally due to flooding and to works which were causing erosion on certain lands. Few complaints concerned water shortages.

Surveys of existing projects continued in the Medicine Hat area when personnel was available. One hundred projects were inspected.

Groundwater requests were numerous during the year. These ranged from requests for information on the location of groundwater to damage caused by flowing wells. These requests were referred to our Groundwater Division, the Alberta Research Council, or to the Department of Health if they concerned the analysis of water samples.

The extremely high flows in 1963 started a trend by the rivers in the southern area to reverse the encroachment by man and vegetation into the flood plain. The 1963 season with its long high water period continued and accelerated this trend. As a result complaints regarding river erosion of lands were numerous. These complaints were received on the Castle, Highwood, Elbow, Sheep, Red Deer and Swan Rivers.

Under our program of assistance to municipalities two projects of river control works were undertaken. The Municipal District of Foothills undertook the building of a rock riprapped dyke on the Elbow River at Bragg Creek to protect roads and property, with the assistance of the province. The work was completed prior to the high water in June. The dyke has been successful in preventing damage in that area.

The Town of High River undertook a further program of gravel bar clearance from the Highwood River in the town area. The previous year's work was instrumental in lowering the flood peak and prevented flooding in the townsite. The work undertaken this year should improve the situation further.

A section of the dyke west of High River will also be riprapped early in 1966. On the dyke, part of which was built many years ago, the original sandstone rock has deteriorated to the point where it no longer has any value in stopping erosion of the dyke. This material will be replaced with sound rock. During the 1963 high water this area of the dyke was subjected to the full force of the river and suffered some damage.

Local flooding did occur in some areas during the spring season. Early in March warm weather in the Drumheller area started flow in the Rosebud Creek. This caused the ice to move downstream and jam against the ice in the Red Deer River. No flood damage occurred at that time since cold weather returned. Again, early in April another warm spell occurred and the ice moved down the Rosebud jamming against the pack which was formed in March. Flooding occurred again on April fourth and four homes were evacuated. By April 12 the water had completely receded and the ice was out on the Rosebud Creek. The Town of Rosebud itself suffered no flooding.

The Village of Canmore suffered some flood damage during the high water period on the Bow River early in June. The townsite is particularly susceptible to flooding and generally experiences some problems every June.

On July 29 a very heavy hail and rain storm occurred in the area immediately south of Calgary. This resulted in serious flooding in the motel area of Midnapore. Severe erosion was noted throughout the runoff area.

During the high water period liaison with the Civil Defence organization in Calgary and the Army was maintained in case of flooding. Other than a small amount of flooding in Canmore no real flood problem occurred during this period so no action was required.

The sulphur plant at Jumping Pound experienced serious water shortages during the winter period pointing out both the extremes of water flow and the need for adequate storage on the stream.

In order to assess the value of "jacks" as an erosion preventive system on our mountain streams an installation of jacks was made in a highly erodable area on Willow Creek. This installation will be watched over the next few years to see if it will provide an economical means of preventing erosion due to high water flows in our streams.

A survey was carried out on the upstream end of the Chain of Lakes reservoir as part of a program to measure the sediment load being carried into the reservoir by Willow Creek. This project is being carried out in co-operation with the sediment section of the Water Resources Branch, Department of Northern Affairs and National Resources.

Money was available in 1965 to fence the Little Bow Canal in the built-up area of High River. Later planning indicated that the canal could be moved away from the built-up area. The town was prepared to dedicate the area as a park if the canal was moved. Plans have now been prepared and the canal will be re-located next year.

A report was completed by our Consulting Engineers regarding the Highwood River flood problem. It points out the need for further protection works as well as the need to stop further removal of the vegetation cover in the area west of High River.

The Chain of Lakes dam, being constructed by the federal government under P.F.R.A. on Willow Creek in the area west of Nanton, is virtually completed and will be able to store water next spring. The Fish and Wildlife Branch have undertaken to kill the fish in the lakes prior to the reservoir being filled.

The Blood Indian dam in the Special Areas was completed in the fall by the P.F.R.A. and it, along with the recently completed Ducks Unlimited dam, should adequately control this stream.

The P.F.R.A. constructed about 300 new dugouts and small projects during 1965 in the southern area of the province. This was less than in 1964 which is also reflected by the abundance of moisture available this year.

A further attempt was made to take over the P.F.R.A. community projects completed under the 1943 agreement. Some progress was made, eight projects were inspected and four were recommended for acceptance. An additional 38 projects require inspection during 1966 to complete the list.

Ducks Unlimited had a good year in that the heavy runoff filled most of their projects. During 1965 a number of new projects were under construction. Among them were the Blood Indian Creek and the Dan Project on Berry Creek. The latter project is worth noting since it could be used in an emergency to supply the Town of Hanna.

In co-operation with the Fish and Wildlife Division it was found necessary to rebuild the weir on the Little Bow River just upstream from Travers Dam. This prevents the fish going upstream to spawn at a time when they cannot return to the stream and hence are lost.

Surveys continued on upstream storage sites on the Highwood River and Pekisko, Stimson, and Jumping Pound Creeks.

As a representative on the Calgary Regional Planning Commission and a member of the subdivision committee, the District Engineer continued to exert all pressure possible to restrict the development in our flood plains and in areas where they will affect future water development. The use of our flood plain continues to be a problem in the planning area. Studies are under way to determine the best method of controlling their use so that we can avoid the pitfalls and problems that have resulted elsewhere due to unrestricted flood plain usage. On the advice of the Calgary Office the proposed centre for handicapped children was moved from the flood plain of the Elbow River to an area further west which is well above the flood plain.

Three proposals for A.R.D.A. programs were discussed during the year. One was concerning the flood plain lands west of High River and their use for recreational purposes; the second was the development of water supplies in the Little Bow River area, and the third, a proposal to develop a recreational area on Fish Creek in the City of Calgary.

The Technical Advisory Committee on Watershed Research in the Eastern Rockies met once during the season to discuss the progress and plan the future of the research areas. Water Resources completed the topographic survey of Streeter Basin as part of its contribution to this project. The land survey to establish the quarter section corners is now under way. Circumstances prevented completion of the boundary marking survey on both Streeter and Marmot Creek.

Good co-operation was maintained with all government agencies in the Calgary area. Complaints received regarding pollution or water testing were referred to the Department of

Health. Several inspections regarding drainage were made at the request of the District Agriculturists. Fisheries were advised on problems concerning lake drainage. The need to conserve water in certain areas almost prohibits their drainage for poisoning of fish in the lakes.

The District Engineer attended three meetings of the Prairie Provinces Water Board during the year as an adviser to the Alberta members.

The Prairie Provinces Water Board Apportionment Committee met five times during the year to prepare a report on the problems concerning apportionment of the waters of the Saskatchewan-Nelson River system between the Provinces of Alberta, Saskatchewan and Manitoba. A trip was made to the Upper Colorado Commission offices in Salt Lake City to discuss the operations of the Commission which administer the apportionment of the Upper Colorado River. The report was completed in December and is now in the hands of the Water Board members.

The Prairie Provinces Water Board Ad Hoc Committee on Network Planning held one meeting to draw up plans and terms of reference for a network planning group. This group would be a committee of the Board and would deal with long range planning of networks.

The District Engineer spent two weeks attending the World Meteorological Conference on Network Design held in Quebec City during June. The conference brought to the fore the need for good planning in all hydrometeorological networks.

The Federal Water Resources Branch completed installation of 50 new gauging stations in Alberta to bring their total of active stations to 253. Of this number 235 are operated by the Federal Water Resources Branch and the remaining 18 are operated by other interests. The Province of Alberta contributed to the installation and operation of 125 of these stations.

These stations may be subdivided as to primary use into the following categories:

Primary Use	No. of Stations
Irrigation	67
Runoff	62
International and Semi-international	33
Power	28
Flood Control	13
Navigation	13
Research	12
Water Supplies	8
Recreation	7
Interprovincial	5
Miscellaneous	5
TOTAL Stations	253

Gauges were established early this year to assess the contribution of the upper portions of these streams to the flow of the Blindman River in connection with the Gull Lake level problems.

The Department of Northern Affairs and National Resources, Water Resources Branch formed an advisory committee on hydrometric networks during the year. This committee was formed to co-ordinate the requests of prairie provinces for the installation of hydrometric networks. The committee met twice during the year and was successful in co-ordinating all the 1965-66 requests.

Crest stage gauges were installed making a total of 80. This was the first year sufficient runoff has occurred on many of our streams to give any readings on the gauges.

The District Engineer is responsible for co-ordinating Alberta's participation in the International Hydrologic Decade.

Lethbridge

During the year the Lethbridge District Engineer supervised new construction on the Bow River Development, Western Block, and managed the operation and maintenance of the Mountain View-Aetna main canal. Other sections of this report cover these activities.

District business was generally at a low level of activity. Water right applications, disputes and problems requiring consultation were fewer in number. Complaints regarding inadequate drainage, illegal and natural diversions, erosion and flood damage required the usual number of inspections.

Activities with regard to river erosion and flood control problems were confined to observations of remedial works done in previous years and reinspection of areas where remedial works had not been authorized.

During the snow melt in the Cypress Hills watermaster service was again provided on Sage Creek. This Creek rises in Alberta and empties into a large, usually dry, depressional area in Montana. Ranchers in Alberta and Montana have water rights on this creek and our position is to assure a fair division of water between them. This year there was plenty of water for all from snow melt. Large quantities of rain water came down the creek later to drown out crops where the channel was unable to pass the total flow.

In March 1965 the District Engineer was appointed to the Oldman River Regional Planning Commission and has since acted in that capacity.

In Memory of Mr. John Mould, Civil Engineer

The sudden death of Mr. John Mould on November 11, 1965 came as a great shock and tremendous loss to our organization. Mr. Mould was an outstanding engineer and fine Christian gentleman. He will be sorely missed by all of us.

been essentially lacking in previous land agencies and Government resource branches. Research and investigation of development feasibility was also assigned to this Branch to fill previously experienced inadequacies.

Amalgamation of the Corporate bodies with the development and investigational groups occurred in 1959 to form the presently constituted Colonization Branch. With the additional duties of providing liaison for irrigation policy, all of the Government programs in irrigation at the project level, with the exception of construction responsibilities, were essentially assigned to this Branch. Participation in water conservation throughout the Province provided scope and challenge to a well qualified staff.

Since 1959, the Branch has been providing a wide variety of services, both agronomic and engineering: to investigate soil moisture retention, crop moisture requirements, soil feasibility, groundwater phenomenon, land tenure and farm techniques; to design and supervise development of land forming, farm irrigation systems, farm and project drainage systems, and farm water conservation practices; and to develop and promote modern concepts of irrigation agriculture among water users, projects, municipal government, and community interest groups in preparation for updating and revision of Alberta's irrigation policies; and to carry analogous programs to the non-irrigated communities of the Province.

Land Settlement of the St. Mary and Milk Rivers Development and the Bow River Development

Transfer of titles during 1965 on fourteen paid up Land Purchase Agreements increased the total number of transfers to one hundred and eighteen at the end of the Corporate Bodies' fiscal year. In addition to this, nine agreements were paid up with transfers pending at the end of the year. Two applicants were allotted land as new settlers, while four additional parcels were added to the holdings of established settlers. The program totals six hundred and seventy parcels of land, three hundred settlers and twenty-two right-of-way compensation and miscellaneous sales.

Colonization Manager Advisory Committees

The Committees met on two occasions to direct land settlement conditions as related to Colonization policies, and to advise on the disposition and utilization of lands held by the Colonization Manager. The Committee called one hearing to consider advising the cancellation of one Land Purchase Agreement, but was inhibited by a Supreme Court Injunction obtained by the settler to prevent the hearing from taking place. A subsequent Supreme Court hearing ruled in favour of the Colonization Manager Advisory Committee; this being appealed by the settler. Results of the appeal were pending at the end of the year. The Committee advised and submitted a draft proposing revised policy to facilitate a more rapid and effective completion of the remaining land disposition.

Report of the Colonization Branch

1965

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L. D. M. SADLER, B.Sc., M.Sc., P.Ag, Supervisor of Soils and Drainage
G. L. STEED, B.Sc., M.Sc., P.Eng., Irrigation Engineer
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S. LEE, B.Sc., P.Ag., Economist
B. BEASLEY, Office Manager

INTRODUCTION

The work load for 1965 was extremely heavy, due to the continuing heavy demand for services from the farm clientele, an increasing call for service and liaison at the municipal and irrigation project level, and sharply increasing directives for information and data for policy considerations. Cooler seasons with above normal precipitation inhibited the increasing trend for agronomic and engineering services, which remained at about the same level or slightly below the previous year. Conditions were opportune to carry out investigations, liaison and negotiations upon which to develop future programs and policies.

It is interesting to note that the two Crown Corporations of this Branch developed from earlier Corporate bodies fashioned as prototypes of the Canadian Pacific Railway Company's Land Settlement Agency.

The history of the Eastern Irrigation District, the Alberta Railway and Irrigation Company, and the Lethbridge Northern Irrigation District revealed agencies of similar purposes and functions. With the change of irrigation finance from development companies to Government support, the corresponding land agencies were created as Crown Corporate bodies responsible to the Lieutenant-Governor-in-Council. The Director of Water Resources, as Secretary of the Irrigation Council, provided clerical services at the Government level.

The greater portion of the Branch originated in the Agricultural Extension Service, when in 1950, Alberta initiated services in soil and water conservation at the farm level. It was recognized at that time that services in land development had

Land Tenure

Tables I and II show the status and trends of land tenure during 1965.

TABLE I

S.M.R.D., B.R.D. and HAYS

	1951 to 1961	1962	1963	1964	1965
Settlers Established	275	288	293	298	300
Quitclaimed, Withdrawals, Cancelled	29	32	38	46	56
Total Number of Purchase Agreements	318	349	362	379	385
Agreements Paid Up	48	72	85	109	127
Active Agreements	241	245	239	224	201
Additional Parcels Allotted	19	36	43	56	62
Parcels of Land Remaining Unsettled	109 (*55-CP)	99 (*62-CP)	90 (*53-CP)	80 (*53-CP)	86 (*48-CP)
Number of Parcels of Land Leased	154	112	110	97	110

(*CP refers to lands reserved for Community Pasture development)

TABLE II

SETTLERS IN ARREARS—S.M.R.D.

	Land		Water Right	
Year	Number	Amount	Number	Amount
1960	118	$ 95,706.83	67	$12,091.79
1961	116	127,191.29	89	14,220.70
1962	106	138,983.72	84	18,133.75
1963	108	182,259.54	89	21,024.40
1964	93	215,846.65	77	22,200.24
1965	87	200,997.69	72	20,882.83

SETTLERS IN ARREARS — B.R.D.

	Land		Water Right	
Year	Number	Amount	Number	Amount
1960	17	$ 9,062.46	2	$ 171.00
1961	41	24,763.14	9	676.72
1962	47	41,045.80	14	2,038.48
1963	55	61,238.24	26	4,763.56
1964	55	84,398.74	43	6,798.78
1965	52	91,772.21	50	10,291.13

ECONOMICS

The increasing demand for more services from the colonization settlers in both the St. Mary and Milk Rivers Development and the Bow River Development resulted in a much greater amount of work being accomplished during 1965 than in previous years. The following major projects were undertaken.

Farm Business Reports—1964

Farm Business Reports for twenty-five settlers and two private owners in the St. Mary and Milk Rivers Development and Bow River Development continued for the third year.

The average Farm Capital Investment for the group increased slightly from $51,001.00 to $51,230.00. However, the increase in inventory on grain and hay only amounted to $535.00, as compared with $1,603.00 a year ago. The livestock carried per farm increased 15%—from 33.7 to 38.9 animal units.

The "Productive Man Work Units" increased from 408 to 443, while Labour Efficiency increased 18%, i.e. from 284

P.M.W.U. to 335 P.M.W.U. Per Man Equivalent. This suggests that both Size of Business and Management Ability improved considerably over the past year.

The Net Farm Income and Labour Earnings also increased slightly, as can be seen from the following summary:

TABLE III

	1963	1964
Gross Operating Revenue	$12,431	$12,217
Operating Expenses	7,048	6,659
Net Farm Income	$ 5,383	$ 5,558
Labour Earnings	$ 3,078	$ 3,239

Studies show that the need for commercial fertilizer will become more important as the world's food requirements increase. That our settlers are aware of this situation will be noted from the 24% increase in fertilizer expenditure and the 41% increase in outlay for crop spray.

In the overall summary, it appeared that 1964 was a favourable crop year. The study shows that our settlers are keeping up with new ideas and new information. Through sound farm management, they will be able to maintain economic farm units.

TABLE IV
FARM BUSINESS ANALYSIS, 1964

Number of Settlers in Study	27	farms
Acreage:		%
Total	518	
Cultivated	359	69
Cropped	273	53
Summerfallow	86	16
Irrigable	174	34
Farm Investment:		
Total Owned Capital	$46,375.00	
Real Estate	24,572.00	
Equipment	10,723.00	
Livestock	6,919.00	
Feed and Supplies	4,161.00	
Animal Units	38.9	
Productive Man Work Units on Farm:		
Total	443 (335 per man)	
Crops	233	
Livestock	172	
Other	38	
Man Equivalents	1.32	
Gross Operating Revenue	$12,217.00	
Total Expenses	6,659.00	(55%)
Net Farm Income	5,558.00	(45%)
Labour Earnings	3,239.00	
Per Cent Return on Operator's Capital	5.5%	
Operator's Net Worth	$41,689.00	
Change in Net Worth During Year + or —	+$ 2,238.00	
Net Capital Ratio	3.9:1	
Turnover of Total Farm Capital	4.2	Years
Total Annual Equipment Costs	$3,433.00	Per Cult. Acre 9.56
Fixed Costs	1,863.00	Per Cult. Acre 5.19
Operating Costs	1,570.00	Per Cult. Acre 4.37
Gross Crop Return	28.53	Per Cult. Acre
Gross Returns Per Animal Unit	71.00	(Cow-calf enterprise)
Total Cost Per Animal Unit	107.00	(Cow-calf enterprise)
Gross Return	122.00	Per $100.00 Feed (Cow-calf enterprise)

FARM INCOME AND EXPENSES FOR NINETY-SIX COLONIZATION SETTLERS (1963)

The farm operations of ninety-six settlers in the St. Mary and Milk Rivers Development and the Bow River Development were summarized and analyzed. A circular containing the district average and the settler's own operations was sent to each individual for study.

The detailed information contained in this programme was also submitted to Canada Department of Agriculture, Economics Branch, Edmonton, upon request in order to determine the feasibility of irrigating land proposed for future development.

The following is a summary:

TABLE V

SUMMARY—ACREAGE, CAPITAL INVESTMENT, 1963

	Medicine Hat, Seven Persons	S.M.R.D. Bow Island, Grassy Lake	Taber	B.R.D. Enchant, Lomond, Travers
Farms Reported	39	22	11	23
Total Land Area (Acres)	376	433	305	661
Cropped	152	231	164	295
Grain	117	185	102	272
Specialty Crops	3	10	30	8
Hay	32	36	32	15
Pasture	80	83	80	144
Summerfallow	43	69	27	169
Waste and Other	101	50	34	53
Irrigable	124	142	119	144
% of Land Area	33%	33%	39%	22%

	Medicine Hat, Seven Persons	S.M.R.D. Bow Island, Grassy Lake	Taber	B.R.D. Enchant, Lomond, Travers
Farms Reported	40	22	11	23
Total Investment	$31,367	$33,213	$41,964	$33,919
Land	$15,848	$15,927	$20,456	$17,072
%	50%	48%	49%	50%
Building	$ 2,079	$ 2,293	$ 3,466	$ 2,250
%	7%	7%	8%	7%
Working Capital	$13,440	$14,993	$18,042	$14,597
%	43%	45%	43%	43%
Machinery & Equipment	$ 6,376	$ 8,270	$ 9,686	$ 8,257
%	20%	25%	23%	24%
Livestock	$ 4,990	$ 4,437	$ 6,562	$ 3,413
%	16%	13%	16%	10%
Grain and Feed	$ 2,074	$ 2,286	$ 1,794	$ 2,927
%	7%	7%	4%	9%
Capital Turnover (years)	4.5	3.6	3.0	4.0

TABLE VI

FARM INCOME AND LABOUR EARNINGS STUDY, 1963

	Medicine Hat, Seven Persons	S.M.R.D. Bow Island, Grassy Lake	Taber	B.R.D. Enchant, Lomond, Travers
Farms Reported	40	22	11	23
Receipts				
Crop Sales	$ 2,974	$ 4,677	$ 8,894	$ 4,576
Livestock Sales	2,227	2,062	3,019	1,796
Dairy & Product Sales	336	424	303	127
Poultry & Product Sales	80	50	142	16
Misc. Receipts	1,268	1,231	1,469	1,364
Total Cash Receipts	$ 6,885	$ 8,444	$13,827	$ 7,879
Less Livestock Purch.	875	207	1,856	656
Inventory Adjustment	+1,027	+1,035	+2,182	+1,268
Total Operating Revenue	$ 7,037	$ 9,272	$14,153	$ 8,491

Expenses				
Feed Purchases	$ 146	$ 158	$ 744	$ 60
Farm Mach. Expenses	1,012	1,242	2,324	1,384
Rent & Share	94	161	204	367
General Farm Expenses	407	475	524	381
Seed & Fertilizer	327	453	769	352
Annual Expenses	587	813	822	610
Custom Work & Wages	372	590	1,499	412
Operating Payments	$ 2,945	$ 3,892	$ 6,886	$ 3,566
Add Depreciation	1,031	1,251	1,358	1,254
Total Operating Expenses	$ 3,976	$ 5,143	$ 8,244	$ 4,820
NET FARM INCOME	3,061	4,129	5,909	3,671
Deduct Interest on Investment at 5%	$ 1,568	$ 1,661	$ 2,098	$ 1,696
Add Operator's Perquisites	258	323	257	225
LABOUR EARNINGS	$ 1,751	$ 2,791	$ 4,068	$ 2,200

Charts and Graphs of Economic Studies

Eleven economic charts and graphs regarding settlement programmes, along with commentaries, were completed and copies distributed. These charts and graphs were used for display purposes on five occasions during the year at agricultural short courses and exhibitions. Excellent comments were received on this project.

Special Programme:

1. Economic Study—"The Effects of Irrigation"

An attempt was made to analyze some of the important factors involved such as farm capital, labour use, crop acreage and production from the 1961 Agriculture Census of Alberta, in order to demonstrate the benefits derived from irrigation. Both the statistics for the Province and Census Division No. 2 were studied and analyzed. It was found that Division No. 2 contained approximately 80% of the total irrigated acreage of the Province, occupied only 8% of the total crop area, yet the production of crops sold during the census year was the highest for the Province, being 17.5% of the provincial total. The total production sold per farm was more than double the provincial average. The capital investment for Division No. 2 was also the highest for the Province, the average per farm being $64,828.00, compared with $37,118.00 per farm shown for the Province as a whole. The labour use and wages paid were almost one-fifth of the provincial total. Division No. 2 also recorded the highest farm expenditures. These were the major factors that stimulated the economic expansion in South Alberta through irrigation.

2. Drainage Study of The Eastern Irrigation District for The Irrigation Policy Committee

An economic study to estimate the cost-benefit relationship of drainage in the Eastern Irrigation District was started in late 1965 in co-operation with other branches of the Department, and scheduled for completion in January, 1966.

WATER RIGHTS

Table VII shows the status and trends of water right agreements.

TABLE VII

WATER RIGHT AGREEMENTS

S.M.R.D.

Year	Active Agreements	Agreements Paid Up	Number In Arrears	Amount Of Arrears
1960	1,275	197	671	$107,798.62
1961	1,243	310	680	101,665.45
1962	1,203	388	719	110,397.03
1963	1,203	468	653	107,584.46
1964	1,154	552	741	105,392.90
1965	1,109	630	716	98,846.61

B.R.D.

Year	Active Agreements	Agreements Paid Up	Number In Arrears	Amount Of Arrears
1960	117	0	88	$ 4,614.00
1961	120	12	131	8,762.91
1962	175	20	135	12,443.98
1963	237	26	174	18,217.72
1964	293	28	190	21,698.23
1965	319	40	217	29,774.16

REVENUE

Table VIII shows the collections from land sales and water right agreements. The land sales concern only colonization settlers whereas water right agreements cover all of the irrigable lands in the St. Mary and Milk Rivers Development Project and the Bow River Development Project.

TABLE VIII

COLLECTIONS ON LAND SALE AGREEMENTS AND WATER AGREEMENTS

S.M.R.D.

	1962	1963	1964	1965
Land Sales	$ 62,000.00	$ 42,000.00	$ 74,000.00	$ 48,000.00
Water Right	119,000.00	127,000.00	113,000.00	119,000.00

B.R.D.

	1962	1963	1964	1965
Land Sales	$ 27,000.00	$ 16,000.00	$ 13,000.00	$ 9,000.00
Water Right	11,000.00	9,000.00	16,000.00	21,000.00

IRRIGATION PLANNING BOARD

The Branch carried out four investigations submitting the reports to the Board which met late in the year to consider project proposals. Advice on a number of proposals was pending at the end of the year due to the lack of adequate information being made available from investigating groups.

IRRIGATION POLICY COMMITTEE

The Committee met on twenty-one occasions, including four meetings for planning and programming, thirteen meetings with irrigation project officials, two meetings with research study personnel, one meeting with the Minister of Agriculture and A.R.D.A. officials, and one conference of all irrigation officials and all bodies and persons interested in Alberta irrigation. The Colonization Manager, as Chairman of the Committee, made numerous visits to irrigation districts to advise on the co-ordination of the program to develop policy recommendations for the Minister. Research and investigation carried on by the Department was reported by the investigating groups.

DRAINAGE COMMITTEE

The Colonization Manager, as Chairman, called five meetings during 1965. Approximately fifty investigational reports, engineering designs and cost estimates were presented, which resulted in the construction of eleven miles of open drains, 5.1 miles of tile drains, 17.4 miles of canal lining, 7.2 miles of relocation of canals, and 2.6 miles of canal deepening. Problem areas in the St. Mary and Milk Rivers Development, Taber Irrigation District, Bow River Development, Lethbridge Northern Irrigation District, Western Irrigation District, and Raymond and Magrath Irrigation Districts, and dryland districts were considered with reports going to the respective agencies.

Only one damage claim, as compared to four the year previous was placed before the Public Utilities Board. Sixty claims were considered by the Drainage Committee for 1965. Payment of these claims will be the responsibility of the respective districts.

During 1965, six drainage agreements between the Department, Irrigation Districts and Municipal authorities were successfully negotiated.

LAND LEVELLING TRUST ACCOUNT

Revenue from the earthmoving and farming equipment was $56,843.60, the operating expenses were $45,389.04, leaving a surplus from the year's operation of $11,454.56. Comparable figures for 1964 were revenue—$82,437.66, expenses—$63,882.77, surplus—$18,554.89.

Loss of revenue in 1965 was due to less operating hours as a result of inclement weather. In addition, one employee retired and two transferred to other positions. The loss of experienced personnel, such as these, and the necessity of training new operators affected production to some extent.

EXTENSION

Education and promotional presentations, displays, demonstrations, tours and lectures were continued as in past years as a public service. Educational aid was organized through the Agricultural Extension Branch. The co-ordination, liaison, and working relations exhibited by the Extension staff were very much appreciated.

EDUCATION LEAVE

L. J. McCracken received education leave with three-quarters salary from October 1st, 1964 to September 15th, 1965. He has completed the requirements for the degree of Master of Science in Irrigation from the University of California at Davis. A report entitled "Drainage Study of the Solano Irrigation District, California" was submitted as part of the requirements for the degree.

N. S. Thomson was awarded a Master of Agriculture degree in Land and Business Administration from the Colorado State University in August, 1965.

CONFERENCE TRAVEL

The Colonization Manager studied irrigation in the Columbia River Basin Project of Washington during the first week of June, reviewed soils as related to the irrigation potential in Saskatchewan during the last week of September, and attended a Conference on Irrigation and Drainage in Montana during the second week of October.

L. D. M. Sadler travelled with several Water Resources Engineers for two weeks in Nebraska, Colorado, and neighbouring states on a study tour of irrigation and drainage.

H. A. Kerr attended the American Society of Agricultural Engineering Conference in Chicago during the second week of December.

Dr. Milton Fireman of Tipton and Kalmbach Incorporated Consulting Firm at Denver was employed by Alberta to study and advise on the soil-water-irrigation technology and its progress. The consulting experience was well received by Department and Irrigation Project personnel.

MISCELLANEOUS

The Colonization Manager was appointed to the Olds Agricultural and Vocational College Advisory Committee on an Irrigation Technician Course. A 1965 contribution consisted of preparation of the proposed curriculum.

SOILS AND DRAINAGE DIVISION

Introduction

Emphasis in various work areas continued to shift both geographically and technically in 1965. The scope of involvement of the division in disciplines other than drainage, seepage and soil classification became considerably broader and more complex. An increased area of service was made possible by a broadening of various policies in irrigation and drainage, and also by the establishment of a professional agrologist in the Eastern Irrigation District to work on soils, groundwater and drainage problems. The interest of individuals and other organizations in the field of groundwater and various methods of soil and water conservation necessitated increased allotments of staff time to projects of a co-operative nature.

As agencies and individuals became more knowledgeable both technically and from a standpoint of familiarity with available services, the demand for services and professional advice increased proportionately. The staff and establishment have been hard pressed to keep abreast of these increased demands.

Recent interest by farmers and professional people alike in the development of groundwater for domestic use has resulted in considerable discussion relating to the possible establishment of a partially subsidized investigational programme as a service to the farm population. If such a policy wins approval, the programme could provide a service of benefit to both the groundwater inventory of Alberta and the users of shallow groundwater resources.

Direct service to irrigation districts as a result of requests from the district and the various committees involved in working on irrigation district problems, continued to be a major part of the work undertaken by the division. At the same time, studies such as post construction effects, drain flows and analysis, monitoring sites to study reclamation progress and shallow groundwater monitoring through southern Alberta continued as an important function of the division and as a source of information for future design and planning purposes. Information such as the above is necessary in the formation of various policies and programmes effecting individual irrigation districts or projects.

Involvement with various committees and programmes such as International Hydrologic Decade and Agricultural Rehabilitation and Development Act has formed a valuable vehicle for enhancing the image of the work undertaken by this branch. At the same time, this involvement provided excellent liaison with other groups working in the area outside of water conservation.

Regional Office Established

With increasing demand for service in the Western and Eastern Irrigation Districts, a regional office was established at Brooks during 1965. L. J. McCracken was appointed to the position of Regional Soils and Drainage Agrologist when he returned from educational leave.

Drainage Investigation and Design

The number of field investigations for high groundwater, salinity and canal seepage were stepped up in 1965 through the addition to the establishment of a new deep drill rig. Versatility in the use of drilling equipment was a feature of the 1965 programme since the division now has at its disposal a shallow drill—samples to ten feet, a large hydraulic rig—samples to fifteen feet, and a third drill rig capable of sampling to a depth of seventy-five feet.

During the winter of 1965, a parallel tile drainage system was installed on a quarter section of Crown land in the Medicine Hat area; investigated, designed and supervised by the division. The use of close spaced parallel interceptor lines is unique in southern Alberta on an applied basis. The second unique feature of the installation was that both perforated and solid sections of tile (open joints) were used to compare effectiveness. The tile was made available on a gratis basis from a local supplier as part of the co-operative effort. Detailed monitoring piezometers were installed in the area and readings on both tile flow and groundwater hydrostatic pressure fluctuations have been carried out at close intervals to provide exceptionally good basic data for future design purposes. This particular installation comes the closest to the theoretical concept of drawdown and groundwater flow that we have yet experienced in this area, due mainly to the soil geology peculiar to the region.

At the request of the Town of Taber, an investigation was initiated to determine the cause of high groundwater problems immediately adjacent to the new town reservoir. The project is being undertaken on a "cost of performance" basis with the exception of professional work. Results thus far indicate that the reservoir constructed in its present location is probably not contributing appreciably to the basement problems in the vicinity. Rather, it would appear that the high groundwater is a result of the abnormally high moisture conditions which existed during the early summer of 1965.

Soil Investigations for Land Classification

The request for land classification on a quarter section basis in the old established irrigation projects increased in 1965 with the largest increase coming in the Eastern Irrigation District. The requests thus far have been for soils and salted area reports in which the classification plans as supplied by this branch were the basis for arbitrating final classification decisions. Requests were serviced as time permitted and will be completed in the winter of 1966.

Major soil classification jobs are continuing in several areas where irrigation contsruction has been petitioned for, or is anticipated in the future. Three large classification reports were completed in 1965: Etzikom Coulee, the Wolf Island area north of Purple Springs and Twin River Community Pasture southwest of Magrath. Work is continuing in the Foremost-Pakowki-Warner areas, southeast of Lethbridge.

Soil and Water Laboratory

Routine analysis of soil and water samples for the purposes of professional reports on salted land problems and soil classification continued to be the major function of the laboratory. Procedures were established for the analysis of samples resulting in designs for domestic water well screens.

A large backlog of samples was completed early in 1965 through the employment of Junior College students on a part time basis.

Analysis of soil samples from seeped land monitoring sites indicated a noticeable improvement in the salt status three years after construction of interceptor drains.

Tile drain water analysis continued to indicate heavy salt concentration. This was particularly evident in areas where glacial till and shallow shale are being drained.

Groundwater Geology Exploration

Installation of a grid of deep, differential length piezometer batteries was started in the Lethbridge area as a part of a study to determine groundwater flow and drainage characteristics of the glacial till and overlying material in the area. This project is a co-operative undertaking with the Groundwater Division of the Research Council and will form part of a proposed International Hydrologic Decade study on irrigation hydrology if and when it is approved. This marked the first time that the division has installed piezometers beyond a normal driving depth of fifteen to thirty feet. Installation was carried out by first drilling to seventy-five feet, then placing the required length of the piezometer pipe in the hole to that depth and thirdly, placing concrete in the bottom of the hole overtopped by a pea gravel to ground surface. Driving was then carried on until the piezometer tip had reached the desired level of eighty feet. The grout material around the pipe acts as a seal to prevent influences of groundwater above the tip elevation and the pea gravel prevents failure of the pipe during driving. Total cost of such an installation is only a fraction of that when conventional means of deep piezometer installation is employed.

A deep drilling contract was let at Brooks in the spring of 1965 at a total cost of $2,000.00 to provide preliminary information in the Eastern Irrigation District as to soils, geology and groundwater conditions that might be expected during future investigations. Holes were drilled and core sampled to a depth of approximately forty feet with perforated groundwater pipe installed in each case. Readings of the groundwater fluctuations in the deep holes were made available to the Water Resources Branch of the Federal Department of Mines and Natural Resources. Their interest in the area stems from the studies of re-charge to the river system from irrigation district.

Water Storage Investigations

Thirty-two sites were tested in 1965 to determine the suitability of the underlying soils for water storage. This is a free service to the farmers and consists of drilling the farmers proposed and alternate reservoir sites. Advice is given on dugout lining materials such as plastic, compacted earth, soil cement, bentonite and chemical sealants, if suitable material for a reservoir does not exist naturally.

International Hydrologic Decade

The Division Supervisor was appointed as Branch Representative on the Alberta International Hydrologic Decade late in the fall of 1964. Early in 1965 the need was apparent for a special sub-committee on irrigation within the Alberta Committee; as a result the branch now chairs an Irrigation Sub-Committee to handle submissions for International Hydrologic Decade proposals. Thus far, a submission on the study of shallow groundwater in irrigation districts has been approved by the National Council, and a second study of an Irrigated Hydrologic Study Basin is awaiting approval. Major participants in the former study are the Research Station, Canada Department of Agriculture, and the Colonization Branch of the Alberta Department of Agriculture. Approximately eight co-operators will take an active roll in the second study when approval is granted.

Drainage Studies

As an initial stage of exploring and investigating total drainage requirements in the irrigation projects of southern Alberta, a study was started on the Eastern Irrigation District, the result of which will form part of a final report on operation, management and economics for consideration by the Irrigation Policy Committee. Initially four basins were chosen from which as much detailed information as possible will be analyzed for inclusion in an overall estimate of drainage requirements on the Eastern Irrigation District. The study is to be completed by February 1st, 1966.

The four basins chosen are each approximately three quarters of a township in size and were chosen on the basis of being representative of the Eastern Irrigation District. Almost the entire establishment of the division was consigned to the study in the last two months of 1965.

Other Services and Activities

Assistance was given to the Olds School of Agriculture in the form of drilling for soil and geological exploration and professional consultation in choosing a suitable dugout location for an irrigation supply source. Just recently, a contact was made with Olds Agricultural and Vocational College for formulation of preliminary plans for installations of soil drainage laboratory material in the field as a direct result of the upcoming establishment of an irrigation technician course at the School. Installations will be completed early in 1966 so that a good start can be made on obtaining records for future laboratory exercises by the student body.

Professional participation and legitimizing in the inspection of damage claims resulting from seepage and high groundwater in the irrigation districts continues to be an important function. The extent of payment on damages claimed by farmers is based on reports submitted by the Soils and Drainage Agrologists and Engineers. Preparation of technical material for use by professional witnesses at Public Utilities Board hearings formed part of the miscellaneous responsibilities of the division in 1965.

Participation in a tour to the west central United States resulted in a broadening of experience and technological base related to irrigation, drainage and groundwater problems. Geological and climatic conditions are similar in some respects to those experienced in south Alberta, so that confidence was gained in the use of new methods of seepage control and irrigation water delivery.

Membership on the Groundwater Advisory Committee by the Supervisor of the Division forms a valuable liaison and basis for forward planning and policy recommendations regarding groundwater inventory and regulations. Valuable contacts have been made as a result of the seat on the Committee which led to a better understanding of the problems involved in groundwater research.

A contribution was made by the Division to the programme planners of the North Alberta Institute of Technology regarding a suggested course outline for a hydrologic technician diploma. As well, the group participated in setting up the class outlines for the irrigation technician diploma at the Olds School of Agriculture.

Service Board contacts have been made with the Division from the County of Vulcan regarding demonstration areas on dryland seepage and salt problems. This request will be serviced in 1966 in the usual manner of carrying out drainage investigations.

TABLE IX

SOILS AND DRAINAGE DIVISION
STATISTICAL SUMMARY — 1965

A. Professional

I.—SOILS INVESTIGATIONS FOR IRRIGABLE LAND CLASSIFICATION	
1. Major Investigations	
(Involving technical field work)	3
Parcels (160 acres)	100
2. Minor Investigations (Involving technical field work on 160 acre parcels or less)	163
II.—DRAINAGE INVESTIGATIONS	
1. Major Investigations (Involving technical field work)	
(quarter sections)	47
Parcels	516
2. Minor Investigations—Parcels (Field inspections only)	762
III.—MISCELLANEOUS INVESTIGATIONS (Involving technical field work)	
1. Farm Storage Reservoirs	32
2. Land Development	6
3. Ground Water Development	8
4. Others	6
IV.—INSPECTIONS	
1. Field (Man days)	270
2. Farm Visits	55
3. Office and laboratory	110
V.—REPORTS	
1. Soils	133
2. Drainage	176
3. Groundwater	28
4. Engineering (general)	20
5. Laboratory analysis (soil and water)	36
6. Administrative	101
7. Miscellaneous	40
8. Inspection reports	143
VI.—EXTENSION WORK	
1. Number of programmes giving talks or demonstrations	12
Attendance	540
2. TV Appearances	11
3. Number of bulletins and newsletters issued	.....
VII.—PROFESSIONAL PARTICIPATION BY GIVING PAPERS (MAN DAYS)	
1. Seminars	2
2. Conferences	25
VIII.—MEETINGS ATTENDED (MAN DAYS)	63
IX.—IN SERVICE TRAINING (MAN DAYS)	18
X.—COURT HEARINGS (MAN DAYS)	3

II. Technical

(Work contributing to functions and reports of Professional Staff)

I.—FIELD	
1. Soil Borings—Sterling drill	1,686
2. Soil Borings—Mobile drill	2,038
3. Soil Borings—Giddings drill	1,104
4. Soil Borings—Manually	306
5. Field analysis for hydraulic conductivity	
(a) Soil Classification	
Well	84
Ring Test	112
(b) Drainage Investigations	.....
(c) Groundwater Investigations	.....
6. Groundwater Installations	
(a) Existing to November 30, 1964	1,802
(b) New to November 30, 1965	832
(c) Readings (Measuring depth to water and hydrostatic pressure)	17,304
7. Engineering Surveys (Man Days)	756
8. Soil and water samples taken in the field	11,171
9. Number of samples for fertility analysis by S.D.S.F.T.L.	.....
10. Number of groundwater recorders (total installed to date)	6
11. Drain flow measurement	524
II.—LABORATORY	
1. Soil and water samples analyzed for salinity, S.A.R., etc.	14,009
2. Number of mechanical analysis	208
3. Hydraulic conductivity tests	26
4. Analysis for gypsum requirements	.....
III.—OFFICE	
1. Basin-wide groundwater table reports	5
IV.—MISCELLANEOUS WORK (MAN DAYS)	102
V.—REPORTS	
1. Laboratory	1
2. Drainage	4

IRRIGATION ENGINEERING DIVISION

Design Criteria "Irrigation Guide"

The irrigation engineering division carried out evaluation tests of various irrigation methods to check recommendations presented in the irrigation guide. Additional tests were made in numerous irrigation districts to enlarge the area of coverage to include all operating irrigation districts in Alberta. The field tests indicated good agreement between the "guide" and the results obtained from the field tests.

Irrigation Gauge

The comparatively wet growing season of 1965 resulted in a great reduction in the use of water for irrigation by many farmers. The notable aspect of the year was the numerous inquiries to District Irrigationist and District Agriculturist offices, in regard to time of irrigation, when a dry period of approximately three weeks did occur during the growing season. This indicated interest and confidence in the Irrigation Gauge service, illustrated the growing awareness of the irrigation farmer as regards the amount of water a soil will hold for crop use and the actual use rate by the crop for various periods of the growing season. The subscription service gained in appeal with a doubling of subscribers in 1965 from the 1964 growing season number.

This year marked the extension of the Irrigation Gauge program into other areas of the province where irrigation is practiced. Irrigation farmers in the Okotoks and Edmonton areas used the Gauge information to determine proper timing of irrigations on their hay and potato crops. Notwithstanding the above normal amounts of precipitation, irrigation was needed in both these areas and was a recognized benefit in production and quality for the farm operators using the Gauge data and irrigation. Notable was the return of four to five tons per acre more of potatoes in the Edmonton area when compared to a neighbour's non-irrigated crop. The service has continued support from various news media, e.g., newspapers, radio and television throughout southern Alberta.

To provide the irrigation farmer with information relative to the amount of water his soils will hold for crop use, a large number of soil samples were taken at various locations throughout the province for laboratory analysis. Bulk density and water holding capacity determinations were completed for numerous sites and soils, to provide the irrigation farmer, irrigation design people and irrigation planners with these important aspects of irrigation.

In co-operation with the Aluminum Company of Canada, six co-operators were selected throughout Alberta for analysis of their sprinkler operations in regard to costs of irrigation, returns realized from irrigation and the effect of incorporation of the proper timing of irrigations into their farm practices. Co-operators were selected at Brooks, Okotoks, Edmonton and Sundry areas for analysis of their overall costs and returns. The resulting high amounts of rainfall in all districts resulted in a deferment of the full program until 1966. All co-operators have indicated an interest to continue record-keeping and follow proper timing of irrigations during the 1966 season and it is hoped that good economic data will result for use by irrigation planners and economists.

Water Control Structures

Irrigation control structures were calibrated and the necessary discharge curves calculated and plotted for use by irrigation farmers. Additional tests were conducted on a self-propelled irrigation dam in combination with spiles, overflow openings in the top of the ditch bank and direct flow over the top of the canal bank over an extended length of the canal.

Sprinkler Irrigation

Numerous tests were made on field operating sprinkler irrigation systems to determine their efficiencies and make recommendations for corrections. Sprinkler designs and evaluations were made on a large number of systems for many areas of Alberta. An in-service-training program was initiated to instruct district personnel in proper design procedures for sprinkler requests in their various districts.

An assessment was made of power costs for various power sources used for sprinkler irrigation in Alberta and a paper was prepared and presented at the annual conference of the Canadian Society of Agricultural Engineers.

Interest in irrigation was illustrated with the good turnout of farm people to the Sprinkler Field Day held at Bow Island, notwithstanding the lengthy wet weather preceding the day and the cold weather occuring on the day of the demonstration. Interest is high and a desire to utilize any available information is indicated more so this year than any other past years.

The addition of Mr. J. W. Thiessen, graduate of the University of Saskatchewan in Agriculture Engineering and a Professional Engineer, will greatly increase the services of the Irrigation Engineering Division to various parts of the province.

TABLE X
IRRIGATION ENGINEERING DIVISION
STATISTICAL SUMMARY, 1965

I.—IRRIGATION GUIDE	
1. Number of border irrigation system evaluations	17
2. Number of furrow irrigation system evaluations	9
3. Number of soil water infiltration tests	172
4. Bulk density studies:	
Number of sites	618
Samples	2,262
Tests	2,262
5. Number of sprinkler system evaluations:	
Number of sites	11
Tests	11
II.—IRRIGATION GAUGE	
1. Number of district recording stations	23
2. Number of weekly records compiled	368
3. Soil moisture tests:	
Sites	559
Samples	2,433
4. Water holding capacity:	
Sites	596
Samples	2,811
Analysis	2,030
III.—WATER CONTROL TESTS	7
IV.—INSPECTIONS:	
1. Field	43
2. Office	31
V.—REPORTS	
1. Number of major reports completed	14
VI.—EXTENSION	
1. Meetings, demonstrations, and field days	31
2. Television programs	13
3. Written releases	15
4. Office interviews	57
5. Circulars distributed	4,730

LAND DEVELOPMENT SERVICE

The service received by farmers through the local District Irrigationist and his staff during 1965 included designs for land levelling, sprinkler irrigation and irrigation structures. Aid was also provided in completing engineering surveys on 20,238 acres of which 7,082 acres were constructed. This required approximately 2,124,600 cubic yards of earth moving.

Completion of land levelling construction was seriously hampered in the field due to weather conditions. The Brooks area had ninety-five days of rain from May to October compared to the ten-year average of thirty-five days. In the Lethbridge area, one hundred and sixty-four field working days were lost due to inclement weather.

The completion of farm irrigation systems with control structures, corrugations and border dykes received more attention in 1965. The border dyke method is being accepted by farmers to a greater extent in that 2,162 acres were border dyked, following land levelling in 1965. This brings the total acreage border dyked to 12,000. Sprinkler irrigation was given more attention than in the past in an effort to improve the farmers' knowledge of the importance of good basic designs. There has been a tendency for farmers to use sprinklers on larger acreages than what the design of the system calls for.

One farmer in the Foremost area adopted the contour farming method in an effort to conserve soil moisture and prevent soil erosion. The use of soil moisture conservation practices will become more important in the dryland areas of Alberta as farmers are made aware of their economic advantage.

Land Development personnel had an active year in extension activities, participating in extension programmes on fifty-one occasions, including television appearances.

As in the past, field investigations and office studies have been carried out to classify lands as to their suitability for irrigation, for irrigation projects and the Irrigation Planning Board. Topography reports were completed on one hundred and thirty-two quarter sections for irrigation districts. In addition, the final classification of the Taber North-West Extension is being completed for the Taber Irrigation District preliminary classification on Etzikom Coulee, Wolf Island and the Twin River Community Pasture, involving one hundred quarter sections. The District Irrigationist at Lethbridge provided survey, drafting and field investigations for land classification to the Lethbridge Northern Irrigation District as requested by the Official Trustee, Mr. P. M. Sauder. The District Irrigationist at Brooks also provided field investigations for land classification for the Eastern Irrigation District in co-operation with soils personnel.

Only eight loans were processed for land development with the St. Mary and Milk Rivers Development and five with the Eastern Irrigation District. Evidently, farmers are able to use other credit sources to secure funds for development or are unable to pay their water rates in order to qualify for the loan.

Mr. V. B. Taylor, Professional Agrologist, District Irrigationist at Bow Island retired as of December 31st, 1965, after serving the branch for ten years. His long experience in Agriculture and genuine interest in irrigation farming has done a great deal in aiding farmers of the area to progress and make better use of irrigation. Mr. G. Hartman replaced Mr. Taylor and is residing in Medicine Hat. His training as an Agricultural Engineer will be of great benefit to the farmers of the area.

During the latter part of the year, the Supervisor and the District Irrigationists made an effort to analyze their role in the Branch and the Department of Agriculture.

District Irrigationists have followed up with meetings of their staff outlining objectives, responsibilities and working relationships. Serious consideration is being given to developing induction and training programmes to aid technical personnel in the performance of their duties.

TABLE XI

LAND DEVELOPMENT SERVICE

STATISTICAL SUMMARY, 1965

A. District Irrigationists	
I.—LAND LEVELLING	
1. Number of applications received (D1 and D2)	332
2. Total acreage of Engineering Surveys	20,238
3. Number of parcels levelled	206
4. Number of completed designs	685
5. Total acreage land levelled	7,082
6. Average cost per acre	$62.00
7. Number of land levelling reports prepared (L1)	234
II.—FARM IRRIGATION SYSTEMS	
1. Number of water control structures installed as per specifications	51
2. Number of acres border dyked	2,161
3. Number of acres corrugated	110
4. Number of sprinkler investigations and designs	28
III.—TOPOGRAPHY ANALYSIS FOR LAND CLASSIFICATION	
1. Number of quarter sections investigated	154
2. Number of topography reports prepared (S2)	132
IV.—INSPECTIONS	
1. Farm visits and field inspections	1,384
V.—REPORTS (Major)	15
VI.—EXTENSION PARTICIPATION	
1. Meetings, Field Days, Demonstrations, Short Courses, Irrigation Schools and TV Appearances	51
VII.—MISCELLANEOUS SURVEYS	
1. Other than land development	392
VIII.—ADMINISTRATIVE AND OFFICE DUTIES	
1. Number of office interviews	1,418
B. Lethbridge Drafting Section	
1. Number of land classification linens completed	6
2. Number of tracings corrected for R/W, land levelling, and reclassification	456

3. Number of land classification report diagrams completed (S3)	104
4. Number of drainage investigation plans and profiles prepared	177
5. Number of general location plans	27
6. Number of display posters, charts, overhead projector plates, and stencil diagrams	133
7. Number of water control structure plans	15
8. Miscellaneous plans, sketches and lettering	829
9. Number of plans issued to farmers and agencies:	
Land levelling reports—L1	95
Water control structure plans	2,337
Land classification prints	1,001
Bulletins and newsletters	653

LETHBRIDGE NORTHERN COLONIZATION MANAGER

P. M. SAUDER, L.N.I.D. Colonization Manager

The land settlement portion of the Colonization Manager's business was completed in the year 1961.

Since 1954, financial assistance, given by way of loans to water users, has been limited to loans for sugar beet labour and hauling.

The total amount loaned in 1965 was $190,000.00, as compared with $207,592.20 in 1964 and $208,046.83 in 1963. The Secretary-Treasurer of the Lethbridge Northern Irrigation District looked after the office work in connection with the loans and the District bore the total expense of this service. The money used to make the loans was borrowed from the Treasury Branch in Lethbridge.

The following schedule gives statistics for sugar beet crops on the Lethbridge Northern Irrigation District for the years 1959 to 1965 inclusive:

Year	No. of Growers	Acres Harvested	Tons Harvested	Tons per Acre	Sugar Content	Total Price Per Ton
1959	479	12,029	146,067	12.14	15.8%	$15.51
1960	462	12,918	155,976	12.07	16.3%	14.84
1961	458	12,298	147,666	12.01	15.3%	13.73*
1962	408	11,386	134,674	11.83	17.2%	21.26
1963	383	10,566	146,423	13.86	15.7%	17.75
1964	399	11,112	125,954	11.33	16.5%	15.89*
1965	363	9,500	110,222	11.60	15.4%	**

Note:

*Includes the subsidy.

**Initial payment was $8.50. Total price will not be known until all of the sugar is sold.

Sugar beets was, of course, the main specialized irrigation crop on the district and has done more to help the water users to become successful farmers than any other crop. Other crops such as potatoes, peas, turnips, carrots, cabbage, beans, parsnips, strawberries, cucumbers, corn mustard, gladioli, sunflowers and flax are also grown but we have no definite reports on these crops.

Feeding and marketing of livestock and poultry were again important and profitable branches of farming on the Lethbridge Northern Irrigation District.

Report of the Agricultural Extension Branch

HEADQUARTERS

S. S. GRAHAM, B.Sc., P.Ag., Director
L. W. RASMUSSON, B.S.A., M.Ed., P.Ag., Supervisor of District Agriculturists
C. A. CHESHIRE, B.E., P.Ag., Supervisor of District Agriculturists
Mrs. V. G. MACDONALD, B.Sc., Supervisor of Home Economics Division
Miss PATRICIA MASCALUK, B.Sc., Home Management Specialist
Mrs. MARION ATKINSON, B.Sc., Extension Clothing Specialist
Mrs. DONNA BAGDAN, B.I.D., Home Design Specialist
J. L. REID, B.Sc., B.S.A., M.Sc., P.Ag., Senior Extension Engineer
G. W. LAW, B.Sc., Assistant Extension Engineer
R. CONSTABLE, B.S.A., Temporary Assistant Extension Engineer
C. L. USHER, B.Sc., P.Ag., Supervisor, 4-H Division
Miss GLENNA ROBINS, B.Sc., Associate Supervisor 4-H Clubs
ROBERT GILMOUR, B.S.A., Associate Supervisor 4-H Clubs
Miss JOAN BANTA, B.Sc., Assistant Supervisor 4-H Clubs
ARNOLD MALONE, Assistant Supervisor 4-H Clubs
WARREN WISMER, B.S.A., Supervisor, Radio and Information Division
JOHN ANDREW, B.Sc., Senior Commentator, Radio and Information Division
LYNN MALMBERG, B.Sc., Commentator, Radio and Information Division
Miss DIANNA RODNEY, B.A., Information Officer, Radio & Information Division
J. M. FONTAINE, B.Sc., P.Ag., Supervisor of Publications

REGIONAL OFFICES

Calgary — Miss Dianne Hammer, B.I.D., Home Design Specialist
D. Hiembecker, B.Sc., Regional 4-H Specialist
Edson — A. F. Belyea, B.Sc., P.Ag., Regional Resource Co-ordinator
Mrs. P. Sheehan, B.Sc., Rural Development Home Economist
Lethbridge — D. E. Darby, B.E., Regional Extension Engineer
Red Deer — R. S. Forrest, B.E., P.Eng., Regional Extension Engineer
Grande Prairie — A. Protz, B.S.A., B.E., Regional Extension Engineer

Office and Agriculturist	**Home Economist**
Athabasca	
G. L. Godel, B.S.A., M.Sc., P.Ag.	
J. M. Bolstad, B.Sc. (Assistant)	
Barrhead	
W. C. Yule, B.Sc.	
Berwyn	
G. R. McNaughton, B.Sc., P.Ag.	Miss L. Sorensen, B.Sc.
Bonnyville	
L. Gareau, B.S.A., M.Sc., P.A.	
Brooks	
I. Lapp, B.Sc., P.Ag.	Mrs. N. J. Gray, B.Sc.
Calgary	
P. Jamieson, B.Sc., P.Ag.	Mrs. I. Leavitt, B.Sc.
A. Reimer, B.S.A. (Associate)	
Camrose	
L. D. Williams, B.Sc., P.Ag.	Miss I. Eby, B.Sc.
F. Kehoe, B.Sc. (Assistant)	
Cardston	
D. L. Steed, B.Sc., P.Ag.	
Claresholm	
J. D. Jantzie, B.Sc., P.Ag.	Mrs. P. Yorgason, B.H.Ec.
Coronation	
W. Dietz, B.Sc., P.Ag.	

Office and Agriculturist	**Home Economist**
Drumheller S. W. Pettem, B.S.A., P.Ag.	
Edmonton, South H. J. Fulcher, B.Sc. D. J. Christiansen, B.Sc. (Assistant)	Mrs. M. Jubenvill, B.Sc.
Fairview J. B. Milne, B.Sc., P.Ag.	
Fort Vermilion M. Rudakewich, B.Sc.	
Grande Prairie N. G. Miller, B.Sc., P.Ag.	Miss I. Semeniuk, B.Sc.
Hanna D. R. Macpherson, B.Sc., P.Ag.	Mrs. M. Cox, B.Sc.
High Prairie L. A. Blair, B.S.A.	
High River C. E. Yauch, B.Sc., P.Ag.	
Lac La Biche A. J. Wiebe, B.S.A.	
Lacombe W. L. McNary, B.Sc., P.Ag.	Mrs. M. Sharp, B.H.Ec.
Lamont G. W. Shewchuk, B.Sc., P.Ag.	
Leduc J. R. Gylander, B.Sc., P.Ag. B. R. Shaw, B.Sc. (Associate)	
Lethbridge R. M. Trimmer, B.Sc., P.Ag.	Miss E. Bartman, B.Sc.
Mayerthorpe D. I. Peters, B.Sc., P.Ag.	
Medicine Hat J. L. Anderson, B.Sc., P.Ag. R. A. Skaien, B.S.A. (Associate)	
Morinville S. C. Powers, B.Sc., P.Ag.	Miss Marilyn Oke, B.Sc.
Olds L. J. Welsh, B.Sc., P.Ag.	Mrs. Edna Clarke, B.Sc.
Ponoka C. C. Robinson, B.Sc., P.Ag.	
Red Deer R. D. Price, B.Sc., P.Ag. W. Hooge, B.S.A. (Associate)	Miss D. Chisholm, B.Sc.
Rocky Mountain House G. A. Ross, B.Sc., P.Ag.	
Ryley To be appointed	
Sedgewick A. E. Edwards, B.Sc., P.Ag.	
Smoky Lake To be appointed	
Spirit River F. Graves, B.Sc., M.Sc., P.Ag.	
St. Paul D. E. Berdine, B.Sc.	Miss E. Zawadiuk, B.Sc.
Taber J. G. Calpas, B.Sc., P.Ag. E. L. Treffry, B.Sc., P.Ag. (Associate)	
Thorhild F. Strashok, B.Sc.	
Two Hills W. J. Dent, B.Sc.	Mrs. J. Kolisniak, B.Sc.

Office and Agriculturist	**Home Economist**
Vegreville	
N. A. Chomik, B.Sc., P.Ag.	Mrs. E. Durie, B.Sc.
Vermilion	
H. M. Douglas, B.Sc., P.Ag.	
W. L. Cody, B.S.A. (Associate)	
Vulcan	
C. J. Roth, B.Sc., P.Ag.	
Wainwright	
J. S. Duncan, B.Sc., P.Ag.	Miss M. Blades, B.Sc.
Westlock	
W. A. Ross, B.Sc., P.Ag.	Mrs. B. McCutcheon, B.Ed.
Wetaskiwin	
W. C. Proctor, B.Sc., M.Sc.	Miss S. Myers, B.H.Ec.
In Training	Miss G. Pike, B.H.Ec.

PROMOTIONS AND TRANSFERS

L. A. Blair	—Associate District Agriculturist, Athabasca, to District Agriculturist, High Prairie.
C. C. Robinson	—District Agriculturist, Barrhead to District Agriculturist, Ponoka.
J. M. Fontaine	—District Agriculturist, North Edmonton, to Supervisor of Publications.
A. F. Belyea,	—Associate District Agriculturist, North Edmonton to Regional Resource Co-ordinator, Edson.
P. Jamieson	—District Agriculturist, South Edmonton, to District Agriculturist, Calgary.
W. S. Morrison	—District Agriculturist, Las La Biche, to District Agriculturist, Smoky Lake, to District Agriculturist, Evansburg.
A. J. Wiebe	—Associate District Agriculturist, Lacombe, to District Agriculturist, Lac La Biche.
H. J. Fulcher	—District Agriculturist, Olds, to District Agriculturist, South Edmonton.
L. J. Welsh	—Associate District Agriculturist, Olds, to District Agriculturist, Olds.
J. L. Kerns	—District Agriculturist, Ponoka, to District Agriculturist, South Edmonton, to Chairman, Soil Conservation Board.
S. C. Powers	—District Agriculturist, Ryley, to District Agriculturist, Morinville.
W. C. Yule	—District Agriculturist, Smoky Lake, to District Agriculturist, Barrhead.
M. Rudakewich	—Associate District Agriculturist, Stony Plain, to District Agriculturist, Fort Vermilion.
J. B. Milne	—District Agriculturist, St. Paul, to District Agriculturist, Fairview.
D. E. Berdine	—Associate District Agriculturist, Vermilion, to District Agriculturist, St. Paul.
F. Kehoe	—Temp. Summer Ass't. District Agriculturist, Ft. Vermilion, to Assistant District Agriculturist, Grande Prairie, to Assistant District Agriculturist, Camrose.
L. A. Malmberg	—Assistant District Agriculturist, Drumheller, to Radio & Information Division.
Mrs. P. Sheehan	—District Home Economist, Grande Prairie, to Rural Development Home Economist, Edson.
Mrs. P. Yorgason	—District Home Economist, Olds, to District Home Economist, Claresholm.
Mrs. M. Atkinson	—District Home Economist, South Edmonton, to Clothing Specialist, Edmonton.
Miss D. Hammer	—Home Design Specialist, Edmonton, to Home Design Specialist, Calgary.
Mrs. M. Jubenvill	—Instructor, O.A.V.C. to District Home Economist, South Edmonton.

D. E. Darby —Regional Extension Engineer, Calgary, to Regional Extension Engineer, Lethbridge.
R. S. Forrest —Regional Extension Engineer, Grande Prairie, to Regional Extension Engineer, Red Deer.
A. Protz —Assistant Extension Engineer, Edmonton, to Regional Extension Engineer, Grande Prairie.

APPOINTMENTS

J. M. Bolstad —Assistant District Agriculturist, Athabasca.
F. Kehoe —Temp. Summer Ass't. Dist. Agriculturist, Ft. Vermilion.
L. A. Malmberg —Assistant District Agriculturist, Drumheller.
D. J. Christiansen —Assistant District Agriculturist, South Edmonton.
N. O. Wohlberg —Assistant District Agriculturist, Stony Plain.
W. L. Cody —Assistant District Agriculturist, Vermilion.
R. Constable —Temporary Assistant Extension Engineer, Edmonton.
Mrs. D. Bagdan —Home Design Specialist, Edmonton.
Miss L. Sorensen —District Home Economist, Berwyn.
Miss I. Eby —District Home Economist, Camrose.
Miss I. Semeniuk —District Home Economist, Grande Prairie.
Mrs. E. Clarke —District Home Economist, Olds.
Miss D. Chisholm —District Home Economist, Red Deer.
Miss M. Blades —District Home Economist, Wainwright.
Miss G. Pike —District Home Economist In Training.
John Lockhart —Agricultural Weather Forecasts, Radio & Information Division.
Lynn Malmberg —Commentator, Radio and Information Division.
Miss J. Banta —Assistant Supervisor, 4-H Clubs.
D. Hiembecker —Regional 4-H Specialist, Calgary.

RESIGNATIONS

John Lockhart —Agricultural Weather Forecasts, Radio and Information Division.
R. E. Grattidge —Associate District Agriculturist, Camrose.
E. Dobko —District Agriculturist, High Prairie.
M. S. Kuryvial —Associate District Agriculturist, Lethbridge.
Mrs. N. Brunet —District Home Economist, Berwyn.
Miss D. Skripitsky —District Home Economist, Vegreville.
Miss E. Davies —District Home Economist, Red Deer.
Miss M. McLachlan—District Home Economist, Claresholm.
Miss M. Phillips —District Home Economist, Camrose.
Mrs. N. Zavediuk —Clothing Specialist, Edmonton.

PART-TIME ASSISTANTS

J. Fenton, Assistant District Agriculturist.
G. Milligan, Assistant District Agriculturist.
R. V. Archibald, Instructor, Rural Welding Clinic.
L. M. Wendelboe, Instructor, Rural Welding Clinic.
J. L. Marr, Instructor, Rural Welding Clinic.
S. Edwards, Instructor, Rural Welding Clinic.
J. K. Mackenzie, Instructor, Tractor Maintenance School.
E. Bristow, 4-H Clubs.
Harvey Glasier, 4-H Clubs.
Malcolm Lysing, 4-H Clubs.
Stuart Fraser, 4-H Clubs.
Dale Greig, 4-H Clubs.
Miss L. Lund, 4-H Clubs.
Miss E. Markle, 4-H Clubs.
Miss E. Sokoluk, 4-H Clubs.
Miss D. Wyllie, 4-H Clubs.
W. Williamson, 4-H Clubs.
Jack Jorgason, 4-H Clubs.
Mel Minchau, 4-H Clubs.
Miss C. Shunter, Assistant District Home Economist.
Miss E. Frost, Assistant District Home Economist.
Mrs. N. Zavediuk, Home Economist Division.

NEW OFFICES OPENED

Fort Vermilion (temporary) District Agriculturist.
Evansburg (temporary), District Agriculturist.
Edson, Regional Resource Co-ordinator, and Rural Development Home Economists.

PROFESSIONAL IMPROVEMENT LEAVE

W. J. Dent, District Agriculturist, Two Hills.
G. R. McNaughton, District Agriculturist, Berwyn.
A. F. Belyea, Regional Resource Co-ordinator, Edson.
F. Graves, District Agriculturist, Spirit River.
C. L. Usher, Supervisor, 4-H Clubs.

LEAVE OF ABSENCE

A. W. Beattie, B.Sc., P.Ag., District Agriculturist, Calgary.

GENERAL EXTENSION

Major progress has been achieved in four important areas of Agricultural Extension:

(1) A marked improvement was achieved in the co-ordination of all agencies working in the Agricultural Extension Field. This included co-ordination at the district, branch, interbranch, interdepartment and interagency. levels.

(2) Better co-ordination of agencies allowed for a definite improvement in planning and implementing programs.

(3) In-Service and Post Graduate training in Extension methods and principles, including rural development, was accelerated. This training involved all Divisions of the Branch and involved training sessions from one day to four weeks and from one semester to a full year of graduate study.

(4) The principle of the appointment and location of Regional Specialists has been approved by the Department. Regional Specialists in Agricultural Engineering and 4-H have been located at several major centres. Other Branches of the Department either have Regional Specialists or are proceeding to appoint such personnel. These include the Dairy, Poultry, Farm Economics, Field Crops and Livestock Branches.

Liaison with research continued to improve. Regular meetings with the three Research Stations has helped make this possible. Similar meetings with University personnel were not held except on an informal basis. Plans were made to insure this necessary liaison by the setting up of the A.A.C.C. and the Extension Advisory Committee. Farm and Home management programs were again given emphasis. Farm Business Associations increased as well as the membership. More intensive follow-up work was required in the analysis of farm records, the consideration of adjustments or alternatives and the implementation of more profitable practices. More District Home Economists were involved than in any previous year.

Another focus of attention by the Extension Branch was the involvement of a number of our staff in Community Development. The setting up of the Edson Rural Development Pilot Area in

Crop District 12, centered at Edson, involved a much broader concept of Extensions' responsibility. A Rural Resource Co-ordinator and a Rural Resource Home Economist were appointed to direct this program in C.D. 14. A close liaison with the Farm Economics Branch research team and other resource persons has allowed an orderly development of an inventory of resources, of the involvement of local authorities and the people and in the methods and procedure to be used to implement any plans for economic or social development.

DISTRICT AGRICULTURIST DIVISION

Major extension programs were conducted in field crop production, livestock improvement, 4-H, Agricultural engineering and economics. The work of District Agriculturists in these areas was supplemented by regional and provincial subject matter specialists. Considerable progress has been made in the co-ordination of extension activities on a regional basis.

Continued encouragement has been given to staff training and professional improvement. Seven Assistant District Agriculturists successfully completed their oral and written examinations. Nine District Agriculturists took three week extension educational courses. Four District Agriculturists took more extensive courses towards a Masters Degree. Three other training activities of one week duration were held. These pertained to A.R.D.A., Communications and Farm Management. About one quarter of the staff participated in each. The District Agriculturists also visited their local Experimental Farms and took part in various educational tours.

Field Crops

Extensive programs were carried out under this section:

1. **Crop Improvement** (grain, forage and special crops)

Farmers paricipating in special projects	1,395
Meetings, demonstrations, field days, short courses, tours, etc.	602
Attendance	15,298
Seed Cleaning Plants assisted	67
Seed drill survey samples submitted	340
Persons otherwise assisted	14,136

2. **Soil Conservation**

Special projects	192
Farms participating	1,150
Demonstrations	361
Meetings	94
Attendance	3,148
Soil Samples forwarded for analysis	3,510
Persons otherwise assisted	4,654

3. **Weed Control**

Special projects	199
Farms participating	2,151
Demonstrations	229
Meetings	100
Attendance	3,593
Weed specimens identified	1,096
Persons otherwise assisted	4,921

4. **Crop Pests and Diseases**

Meetings	41
Attendance	1,708
Specimens identified	934
Persons otherwise assisted	2,807

5. **Animal Pest Control**

Farmers participating in coyote control	1,669
Farmers influenced to control warbles, lice, etc.	2,839
Meetings	29
Attendance	1,172
Specimens identified	82
Persons otherwise assisted	1,785

6. **Agricultural Service Boards**

Meetings attended	364
Tours, field days, etc.	54
Attendance	1,464
Persons otherwise assisted	2,348

7. **Horticulture**

Meetings	113
Attendance	5,333
Farmstead plans assisted	715
Shelterbelt plans assisted	3,078
Demonstrations and Farm orchards assisted	273
Persons otherwise assisted	7,484

8. **Beekeeping**

Meetings	5
Attendance	260
Persons otherwise assisted	295

Livestock

Livestock extension activities included various efforts to improve the breeding, feed, care and management of beef cattle, swine and sheep.

1. **Livestock Improvement**

Meetings, demonstrations, short courses, tours, etc.	231
Attendance	12,908
Herds or flocks culled or selected	228
Feed samples forwarded for analysis	1,017
Farmers assisted with pedigree registrations	993
Farmers assisted with R.O.P.	306
Farmers using Departmental dehorners	938
Farmers using Departmental tattoo equipment	194
Livestock placements:	
Cattle	1,685
Sheep	1,402
Swine	1,148
Farmers assisted with other livestock projects	2,409

2. **Livestock Marketing**

Purebred public sales assisted	52
Commercial public livestock sales assisted	46
Persons otherwise assisted	2,409

3. **Veterinary and Livestock Disease Control**

Numerous enquiries regarding livestock diseases were referred to veterinarians and laboratory services.

Specimens submitted or recommended for diagnosis	1,327
Enquiries regarding diseases and health problems	2,229
Farms assisted with improved nutrition	1,217
Farms assisted with improved husbandry management	1,687
Meetings, short courses, etc.	55
Attendance	1,913
Persons otherwise assisted	2,112

Poultry

Extension activities by District Agriculturists in this field were limited. 506 persons were assisted. District Agriculturists attended 13 poultry functions where there was an attendance of 380.

Dairying

Dairymen were assisted with cow testing, dairy records, quality production, marketing, improved breeding, care, feeding and herd management.

Activities included:

Special dairy projects	18
Farmers participating	198
Meetings, demonstrations, tours, etc.	45
Attendance	2,214
Farmers assisted with cow testing	159
Dairy herds culled or selected	30
Contacts with dairy manufacturing or frozen food lockers	146
Persons otherwise assisted	1,013

4-H Clubs and Junior Activities

District Agriculturists were responsible for the organization and supervision of the agricultural 4-H Clubs. Local Club Leaders have assumed more duties in the conduct of many 4-H activities.

A summary of the District Agriculturists' work with 4-H included:

4-H functions attended by District Agriculturists	1,647
Attendance	73,755
Farm and Home visits regarding 4-H and Junior Activities	2,892
Talks and demonstrations, etc. by D.A.'s at 4-H functions	1,113
Other Junior Activities assisted	116
Attendance	4,594
Persons otherwise assisted	6,671

Agricultural Economics

Agricultural extension programs emphasized several aspects of economics. Some of the major topics included farm records, accounting, business analysis, budgeting, marketing, farm leases, rental agreements, sources of credit and its use, income tax, estate planning, and economic principles.

These activities have been summarized in the following table:

AGRICULTURAL ECONOMICS TOPICS	INDIVIDUAL CONTACTS		SMALL GROUPS			MASS	
	Farm Visits	Office Visits	No. of Groups	No. of Meetings	Attendance	Meetings	Attendance
1. Farm Records and Accounting	571	1,848	76	215	3,054	18	917
2. Farm Business Analysis	570	987	52	114	1,370	14	716
3. Budgeting	207	789	25	45	583	7	593
4. Marketing and Price Outlook	181	829	5	8	145	13	1,039
5. Farm Lease and Rental Arrangement	191	717	6	8	159	11	599
6. Farm Credit	171	938	8	12	240	6	400
7. Income Tax and Estate Planning	102	509	7	10	154	30	2,166
8. Economic principles	221	531	10	27	513	14	806
9. Other	195	551	14	15	516	15	565

Summary of above:

Farm Visits	2,279
Office Visits	7,420
Organized discussion groups	116
Families participating	1,181
Total group meetings	429
Total attendance	5,642
Total Families worked with (individually or in groups)	3,155
General meetings and short courses	116
Attendance	6,645

Agricultural Engineering

Work in this area dealt with farm buildings, water and sewage installations, drainage, irrigation, farmstead mechanization, rural electrification, materials handling, and farm machinery.

A summary of these activities included:

Farm calls	1,912
Office calls	6,455
Demonstrations, Field days, and schools	62
Attendance	2,937
Short courses and meetings	97
Attendance	4,863

Publicity

Extensive use was made of the mass media.

	1964	1965
Newspaper releases	1,825	1,801
Newspapers using releases	92	93
Newsletters written	442	453
Newsletter circulation	61,310	37,477
Radio talks and interviews	414	631
TV presentations	61	118

D.A.'s also submitted 1,119 Radio and TV releases and spot announcements.

Other Activities

The formation of Agricultural Advisory Committees has been encouraged to study district needs and opportunities. Twenty-five extension advisory groups have held 76 meetings with an attendance of 1,774. District Agriculturists discussed A.R.D.A. at 94 meetings with an attendance of 2,740. 98 other meetings were organized with an attendance of 3,524. District Agriculturists also assisted 227 district organizations with 386 meetings where there was an attendance of 17,668.

SUMMARY OF DISTRICT AGRICULTURISTS' ACTIVITIES

	1964	1965
Meetings	5,136	4,591
Attendance	239,333	237,922
Farm Visits	18,781	15,198
Office Visits	69,408	59,591
Phone Calls	57,855	61,541
Letters Written	55,319	50,381
Bulletins and circulars distributed	207,936	185,471

4-H DIVISION

1965 was a difficult year in 4-H as a very heavy program had to be maintained by a staff which was largely inexperienced. In spite of this handicap progress was made and a number of new activities were established.

A change in 4-H policy during the year allowed for the introduction of projects in light horses. Provision was made for multi-project clubs in order to meet specific needs and wants of young people.

Another policy change of significance provided for the establishment of a regional 4-H specialist at Calgary. This person was responsible for co-ordinating the 4-H program in the surrounding districts and helped relieve the District Agriculturists and District Home Economists of much of their work load in 4-H.

A new and uniform system of grading for members in all projects was introduced, placing more emphasis on the development of the club member and less on project achievement. Leaders were asked to assume further responsibility in the grading of members in their clubs.

Assistance with the Program

1. Other Department Branches:

Substantial assistance in the judging of achievement days and in other phases of the program was given by members of the Livestock, Field Crops, Poultry, Dairy and Agricultural and Vocational Colleges Branches. In addition, the Agricultural and Vocational Colleges were hosts to club weeks, Provincial Eliminations and other 4-H events. An accounting of much of this assistance will be found in the reports of these branches. In all cases the help given was very much appreciated.

2. Canada Department of Agriculture:

A revised agreement of assistance to 4-H with the Canada Department came into effect during the year. This revision allows for a small increase in support of some phases of the program. The financial contribution of the Canada Department during the fiscal year was $15,750.39. Staff from the Canada Department assisted in judging 4-H events, in the scoring of carcasses, in ribbon branding 4-H beef and in the obtaining of carcass grading information on 4-H beef and swine. The Canada Department had on loan to 4-H clubs during the year one dairy bull, seven boars and eleven rams. The very substantial contribution of the Department assisted greatly the 4-H program.

3. Organizations:

A study and revision of the support of organizations was undertaken during the year. It is hoped this will provide the base on which to establish a 4-H foundation through which all private support to 4-H can be channelled. Assistance in 1965 at the Provincial level amounted to $42,000.00. This was exclusive of premiums paid on 4-H livestock. In addition, the field staff of the Alberta Wheat Pool and the United Grain Growers Ltd. actively assisted with numerous 4-H functions throughout the year.

Substantial support of 4-H was also in evidence at the local level from service clubs, boards of trade, agricultural societies, banks, livestock associations and others. The total value of local support, while difficult to determine would be very high.

4-H CLUB DISTRIBUTION IN ALBERTA, 1964-65

Agricultural Projects

	1964		1965	
	No. of Clubs	Members	No. of Clubs	Members
Beef	236	4,275	225	4,277
Dairy	51	822	52	826
Swine	5	54	6	80
Sheep	4	48	3	42
Poultry	1	12	1	12
Field Crops	45	715	44	697
Sugar Beets	2	44	2	35
Corn	1	11	1	12
TOTAL	345	5,981	334	5,981

Homemaking Projects

	1964		1965	
	No. of Clubs	Members	No. of Clubs	Members
Clothing	118	1,593	109	1,474
Garden	54	702	57	756
Food	12	144	20	251
Home Decoration	1	8	1	23
TOTAL	185	2,447	187	2,504

Total (All projects) .... 8,428 members .... 530 clubs

Increase (All projects) .... 57 members .... 9 clubs (decrease)

Organized Club Activities

Between 80% and 90% of all 4-H work is carried out individually by members at home. This includes work on the project and on special assignments. In addition, club members in 1965 took part in organized group activities as follows:

Regular Club Meetings	4,552	Rallies	100
Special Meetings	618	Tours	551
Total Organized 4-H Activities	6,368	Achievement Days	455
		Leadership Courses	92

TOTAL Attendance (4-H members and other persons) 138,848

Leadership Training and Recognition

A total of 20 one-day regional courses were held which were attended by 730 leaders and assistants. In addition, 10 one-day project workshops were organized for clothing leaders. Attendance at these was 135. Executive courses were held at Vermilion and Grande Prairie with an attendance of 60 while Junior leaders courses at Grande Prairie and Ponoka were offered to over 100 senior members.

Two Provincial two-day training courses were held in Edmonton. Attendance at the two totalled 257. In these sessions the trend toward more general leadership training was continued. Resource personnel from the University were used to assist with this.

Five year leadership certificates were presented to 72 persons, ten year certificates to 25 persons and fifteen year certificates to 5 persons.

4-H Club Weeks

Three club week programs were held at the Olds Agricultural and Vocational College. Total attendance at these weeks was

479 delegates representing an equal number of clubs. In addition there were 16 delegates in attendance from outside the Province. The general program theme was "Our Heritage".

Provincial 4-H Eliminations

These were held at the Olds Agricultural and Vocational College. Total attendance was 188 senior 4-H members representing most districts in the Province. Selections were made for all major awards. Results were as follows:

National 4-H Club Conference, Ottawa and Toronto, November, 1965:

Dwight Woody, Coronation 4-H Beef Club
David Pope, Red Deer 4-H Beef Club
Doug Gibb, Killam 4-H Beef Club
Deryk Ziebler, Vegreville 4-H Beef Club
John G. Kalbhen, Rockyford 4-H Beef Club
Robert Gould, Rosalind 4-H Beef Club
Roy Dowswell, Rosebrier 4-H Dairy Club
Lloyd Giebelhaus, Vegreville 4-H Field Crops Club
Duart Berg, Josephburg 4-H Swine Club
Mary Leah Milligan, Bon Accord Clothing Club
Bernice Letke, Millet 4-H Clothing Club
Lorraine Nielsen, Modern Misses 4-H Clothing Club
Phyllis Tabler, Lone Ridge 4-H Garden Club

Montana State 4-H Congress—Bozeman, August, 1965
Melvin Clark, Sturgeon Valley 4-H Dairy Club
Stan Schellenberger, Spruce Grove 4-H Beef Club
Jackie Robinson, Halkirk 4-H Clothing Club
Carol Bamford, Red Deer Lake 4-H Food Club

U.S. National 4-H Conference, Washington, April, 1966
Marland Larter, Picture Butte, Alberta

U.S. National 4-H Congress—Chicago, November, 1965
Brenda Young, Calgary, Alberta.

Inter-Provincial 4-H Exchange—July, 1966

To: British Columbia—Leona Ferbey, Bon Accord 4-H Clothing Club
Saskatchewan—Ray Lane, Claresholm 4-H Beef Club
Manitoba—Allan Bushfield, Balzac 4-H Beef Club
Ontario—Pat Bolduc, Stavely-Parkland 4-H Beef Club
Quebec—Stanley Boman, East Ponoka 4-H Beef Club
P.E.I.—Donald Johnson, Endiang 4-H Field Crops Club
Nova Scotia—Beverley Patching, McNally 4-H Clothing Club
New Brunswick—Donald Briggs, Ardrossan 4-H Beef Club
Newfoundland—Alice Platt, Olds 4-H Dairy Club

Exchange Programs

(i) Alberta-Montana 4-H Exchange

This was the 19th year of this exchange and as usual it proved to be a highlight. Delegates from Montana who were guests at Club Week at Vermilion included:

Georga Orvine	Havre	Wayne Swigart	Montana
Euon Vickery	Great Falls	Doug Linhart	Montana

The Alberta delegates listed previously were accompanied to the State Congress by Mr. P. Jamieson, District Agriculturist, Calgary, and Miss Glenna Robins, Associate Supervisor, 4-H Clubs, Edmonton.

(ii) Canada-U.S.A. Exchange Program

Canada again sent a delegation of ten 4-H members and two departmental representatives to the U.S. National 4-H Conference in Washington, D.C. In return, eight U.S. delegates were guests at the National 4-H Conference, Ottawa and Toronto.

This year for the first time Canada sent a delegation of ten senior members to the U.S. National 4-H Congress in Chicago. One delegate was selected from each province.

(iii) Inter-Provincial 4-H Exchange

1965 marked the third year of this exchange program financed by the Royal Bank of Canada in co-operation with the Canadian Council on 4-H Clubs and the Provincial Departments of Agriculture. One selected delegate from each Province visited in Alberta for two weeks while nine went from Alberta to the other nine provinces. This is a farm to farm type of exchange designed to give 4-H members a better understanding and appreciation of Canada.

(iv) Western Canada Exchange

Alberta sent nineteen delegates and two volunteer leaders on a one-week farm to farm trip in Manitoba. This award trip was financed with a grant from the Canadian Centennial Commission.

Leaders:

Mrs. M. Renwick	Three Hills	Mr. Gordon Lucas	Lomond

Delegates:

Rita Clennett	Mannville	Joan Beck	Gwynne
David Cuming	Crossfield	Elaine Fulgham	Paradise Valley
Joan Mulder	Midnapore	Donna Chant	Olds
Donald Silver	Huxley	Linda Hoff	Metiskow
Joan Ballhorn	Wetaskiwin	Eileen Gower	Edmonton
Carole Thorsen	Innisfail	Ken Burgemeister	Hanna
William Sangster	Taber	Dale Berry	Lacombe
Alfred Erickson	Penhold	Marion McDowell	Ponoka
Laurie Hueppelsheuser	Blackfalds	Ross Moon	Cherhill
Marlene Bertschy	Mossleigh		

Visiting and Outgoing Delegations

(i) Visitors

In addition to those mentioned elsewhere, 4-H in Alberta was host to the following during the year. Two delegates from Saskatchewan at Olds Club Week. Two delegates from Saskatchewan at Provincial Junior Leadership Camp. Six delegates from British Columbia at Fairview Camp and ten delegates from British Columbia at Olds Club Week. The Province provided orientation for two delegates from the North West Territories invited for the first time to attend National 4-H Club Conference in Ottawa and Toronto. A delegation of seven leaders from Montana were guests for the first time at the Provincial Leadership Conference in Edmonton.

(ii) Outgoing Delegations

Two senior members, Elaine Hennig, Stony Plain and Don Briggs, S. Edmonton, were delegates to the Montana State 4-H

Conservation Camp. The winners of the Provincial 4-H Public Speaking Competition, David Cuming, Crossfield, and Ken Eshpeter, Strome, received an award trip to the Saskatchewan 4-H Leadership Camp. Two senior members, Dora Campbell, Mossleigh, and Ed Lefsrud, Viking, were delegates to the British Columbia Club Week at Castlegar, B.C. The Red Deer 4-H Council sent 38 delegates for a one week trip to British Columbia where they were guests of 4-H people in that province.

Award Trips for Leaders

For the second year award trips were made available to recognize outstanding leadership in 4-H.

(i) Eighth Western Canada Farm Safety Conference

Two leaders, Harold McCarty, Vegreville and Don Porter, Taber, were named to attend the Conference. Expenses of the trip were assumed by the Alberta Pacific Grain Company.

(ii) Montana State 4-H Congress

Ten leaders were sponsored to this event by Calgary Power Ltd. and Canadian and Northland Utilities Ltd.:

Mr. Richard Gabriel	Stettler	Mr. Harold Schielke	Carstairs
Mr. Ken Selph	Vegreville	Mr. Norman Schmaltz	Beiseker
Mr. Dave Silver	Huxley	Mrs. Mary Wilton	Bentley
Mrs. C. G. Cameron	Midnapore	Mrs. Vera Brown	Cherhill
Mrs. John Murray	Lethbridge	Mrs. Hans Beck	Gwynne

General 4-H Activities

(i) Camps, Rallies, Tours:

Fair Camps were conducted at Vegreville, Camrose and Edmonton. In Calgary a rural youth week was sponsored by the Calgary Exhibition and Stampede Association. Camps were also held at Elkwater, Buffalo Lake, and Fairview. In addition to the camping program, a Provincial one-week Junior Leadership Camp was held at Gold Eye Lake for 77 specially selected delegates. Monies for this were provided by the Calgary Herald and the Edmonton Journal. Total attendance at summer camps was 880.

Banquets and rallies were held in most districts during the year. Many of these were year end activities taking the form of color nights. Average attendance was about 175 persons.

(ii) Thematic Displays—Floats:

The building of displays and floats continued to be a popular 4-H activity with entries being noted at most summer fairs, and many achievement days. Provincial winners in thematic displays were: The Sturgeon Valley Dairy Club at Edmonton, and the Medicine Hat Dairy Club at Calgary. Both displays went forward to compete at Regina, where the Sturgeon Valley Dairy Club topped the Inter-Provincial competition.

The Edmonton Journal again strongly supported 4-H floats in the Edmonton Exhibition Parade. This resulted in a total of nine entries.

(iii) Public Speaking:

This has become a very popular and worthwhile activity in 4-H. In addition to training given at regular meetings in self-expression, public speaking competitions were held at club, district, regional and Provincial levels.
Provincial winners were:

Southern Alberta—David Cuming, Crossfield;

Northern Alberta—Ken Eshpeter, Strome.

A new introduction into competitions for 1965 was impromptu speaking.

(iv) 4-H Demonstrations:

This phase of 4-H work was emphasized more strongly than ever during the year. All delegates to Provincial Eliminations were required to give demonstrations. In addition, 4-H demonstration booths were set up at the Edmonton Exhibition with members giving prepared demonstration publicly throughout the week.

(v) Farm Safety:

The major activity featured in Farm Safety during the year was promotion and sale of the new Slow Moving Vehicle Emblem. Total sales by clubs included 3,600 emblems and 1,600 fluorescent warning flags.

In addition, during the year 4-H members co-operated with the Alberta Safety Council in the Tractor Highway Accident Survey.

District 4-H Councils

One new council was formed during the year bringing the total number active to 21. Councils are becoming much more effective with experience in providing assistance in organizing and conducting inter-club activities and in distributing awards.

Press, Radio and Television

Excellent coverage was obtained from all three media in 1965. The 4-H weekly TV program established four years ago on C.F.R.N. TV was again carried by that station and by C.F.C.N. TV. The 4-H Division undertook the responsibility of preparing most of the programs. These were of an instructional nature beamed at 4-H members, parents, and leaders. Radio Station C.F.C.W. Camrose, again held a winter 4-H program competition. 4-H Division staff were guests on 40 radio and 42 television programs throughout the year.

Publications

4-H Club News: Two issues of the bulletin were published by the Division during the year. Total distribution to 4-H members and supporters of the program was 10,000 copies per issue.

New publications prepared by the 4-H Division were:

"Communications the Lifeline of Society"
"Interior Design"

College 4-H

The college 4-H clubs at Olds and Vermilion were organized for a third year. The rogram carried out during the year was basically one of leadership development.

Post 4-H

The 4-H Alumni club on the University Campus continued to be active with a membership of 25. This group of former 4-H'ers keeps in close touch with the 4-H Division.

The sixth annual reunion of former provincial 4-H delegates was held at the Banff School of Fine Arts. This group of Alumni work closely with the 4-H Division.

Provincial Record and Project Book Competition

Winners were:

Food:
  1st year—no winner.
  2nd year and up—C. Bamford, Red Deer Lake.

Clothing:
  1st year—L. Haines, Mayerthorpe.
  2nd year and up—D. Sanden, Hussar.
  Wardrobe Plan—C. Koole, Mossleigh.

Field Crops:
  Larry Uniat, New Buchach.

Dairy:
  Doreen Gryzb, Breton.

Garden-Horticulture:
  1st year—P. Massing, Ponoka.
  2nd year and up—N. Rigney, Bon Accord.

Scholarships

(i) Wheat Board Surplus Monies Trust Fund Scholarships:

A total of 21 of these scholarships each, to the value of $100.00, were awarded at Club Weeks. Names of recipients are contained in the report of the Board of Trustees found elsewhere in this annual report.

(ii) J. Pennington Memorial Scholarships:

Three Scholarships were made available in 1965 from earnings of a fund established to provide scholarships for 4-H members by the late J. Pennington, a former 4-H leader. The scholarships for 4-H members are valued at about $500.00 and are tenable in agricultural or related courses at colleges of agriculture and universities. At least two will be provided annually. 1965 winners are: Miss Jennifer Brown, Cherhill; Ross Moon, Cherhill, and David Patterson, Hondo.

(iii) Other Scholarships awarded partly on basis of 4-H records:

(a) Canadian National Exhibition Scholarship—value of $600 to Miss Diana Aronson, Stony Plain.

(b) Henry Wise Wood Memorial Scholarships—value of $135.00 each and tenable at the colleges of Agriculture:

Ernest Pelletier, Legal
Donald Cos, Rosalind
David Herbert, Lousana
Jack Siebenga, Blackfalds
Wanda Eastman, Brownvale
Robert Friesen, Crooked Creek.

(c) Alberta Wheat Pool Scholarships—each to the value of $200.00 and given to students in Home Economics at the University of Alberta:

Mary Leah Milligan, Bon Accord
Janice Giebelhaus, Vegreville
Elaine Pekse, Midnapore.

Agricultural Projects

Beef Clubs:

The beef projects continued as the largest group of projects with a membership of 4,275 in 236 clubs. The two senior options, the pen of five and the breeding projects showed again in popularity and provided a new challenge to many older members. Very strong local support of 4-H beef sales was in evidence in most areas.

Delegates from the beef clubs to the Western Stock Growers Association Convention in Medicine Hat included Marland Larter, Picture Butte and Pat Bolduc, Stavely.

Dairy Clubs:

Dairy continued as the second most popular agricultural project with 51 clubs involving 822 members.

A total of 18 delegates representing all clubs from Red Deer south were guests at the Alberta Dairymen's Convention in Calgary.

The Provincial 4-H dairy show held in conjunction with the Red Deer Exhibition attracted 33 in the calf class and 27 in the yearling class. The Alberta Dairymen's Association and the Red Deer Exhibition again assisted materially with the show.

Winners were as follows:

Champion	B. Young, Calgary
Reserve Champion	P. Hoy, Midnapore
Calf Class	B. Folkerts, Calgary
Yearling Class	B. Young, Calgary
Showmanship	B. Folkerts, Calgary

The Alberta Dairy Princess this year, Miss Gaylene Miller of Dalemead was formerly a member of 4-H.

Sheep, Swine and Poultry Clubs:

Two new award trips were made available to members of swine clubs. In the first of these two delegates, Marie McClure, Ohaton and Laurie Heuppelsheuser, Blackfalds were selected to attend the Alberta Locker Convention. The second award involved sending a representative from each swine club to the Western Hog Growers Association Convention in Red Deer. The delegates in each case were sponsored by the Association concerned.

Field Crops Clubs:

These clubs were again sponsored provincially by: The Alberta Wheat Pool, The United Grain Growers Ltd., and The Line Elevators Farm Service. Winners in the Provincial Plot Competitions were:

Junior Project	John Ohnysty, Evansburg
Intermediate Project	Wayne Joss, Burdette
Senior Project	Kenneth Sackett, Crossfield

The twenty-second Provincial Junior Seed Fair was held in conjunction with the Calgary Chamber of Commerce Seed Fair and short course. The Fair attracted 110 entries in 15 classes.

At the Royal Winter Fair, an Alberta 4-H member, Larry Hixt of Beiseker captured the World Wheat Championship. In addition, Alberta 4-H members placed 2nd and 4th in the 4-H Wheat Class.

Homemaking Projects

Clothing Clubs:

This again proved to be the most popular homemaking project with an increase of five clubs being reported. Three of these five are multi-project clubs. First and second year projects were revised somewhat to place emphasis on wardrobe planning and fit of garments.

Food Clubs:

Although the number of food clubs decreased this year, those clubs organized are very active. Projects remained the same as in the past with basic cookery skills aimed at everyday cookery. Senior members chose such projects as foreign cookery, yeast breads, desserts, etc. for advanced study in these phases.

A boys' food club, organized in the Ryley area, proved very successful.

Interior Design:

One interior design club at Two Hills is in operation. In addition, several senior members of clothing clubs are carrying interior design as a project. Application of art principles and sewing techniques to practical problems comprised this project. A newly printed 4-H "Interior Design" manual was used as a resource book.

Garden-Horticulture Clubs:

The number of clubs in this project decreased slightly but with an increased membership of boys. Projects remained the same as in past years.

New Projects

4-H Light Horse and Pony Projects:

After careful consideration it was decided that projects in light horses should be offered through the 4-H program. A total of four projects were established including: Horsemanship, Foal-Yearling, Two Year Old Horse and Brood Mare.

The initial response to the projects showed 15 clubs organized in an equal number of districts.

Multi-Project Clubs:

The limits for multi-project clubs established a year ago, were extended to include any desired combination. This will now allow for summer and winter projects to be carried within the bound of the same club providing for continuity of the program throughout the year. This arrangement is filling a need where there are insufficient young people interested in any one project or where interests vary.

HOME ECONOMICS DIVISION

Extension Home Economists:

Helped families decide on suitable values and goals.

Helped families develop and use their personal resources.

Helped parents understand child development and care.

Encouraged and showed ways to build a healthy home and community life.

Encouraged use of creative arts to improve family living.

Extension Home Economists showed women and communities ways to use their resources to enrich their family lives. Home Economists adapted their programs and methods to meet the varying needs of the people.

Family life experienced changes. More mothers worked outside the home, educational levels have risen, and families experienced increased standards of living. An abundance of goods to buy, services to hire, and wide choices of leisure activities called for good management and an understanding of family values.

While dealing with the unique problems created by the rising living standards, extension Home Economists faced the problems of a growing number of low income families. The Home Economists attempted to help these families improve their situation and to become contributing members of their community.

Home Economics information was carried to homemakers and individuals in the province through radio and television programs, newspaper articles, and newsletters to provincial and local organizations.

District Home Economists gave attention to the educational programs of homemaker groups, new homemakers, senior citizens, 4-H girls, Indians, and low income families.

Food and Nutrition

	No.	Attendance
Demonstrations (9 on TV)	35	
Lectures and Study Group Meetings	114	5,096
School Lunch Programs	3	
Home Visits	138	
Persons otherwise assisted	3,128	

Additional information was given at 66 meetings and achievement days for 4-H food and garden clubs on food preparation, preservation and standards.

The complexity of our food supply increased the need for accurate and unbiased information on nutrition and food quality. Many consumers were eager to learn what foods are best in view of purpose, price, preparation methods and nutritional value.

The increase in meals eaten away from home and the upsurge in sales of needless "health foods", reducing aids, diet supplements and other food fads—emphasized the need for the homemaker, and all individuals to be informed regarding selection of an adequate diet.

Despite increased food prices, consumers substituted relatively higher priced foods for those previously bought. This trend influences those on low incomes and Welfare assistance in the unwise purchase of foods.

The Home Economics Division continued the role of liaison between consumer, food producer and processor groups. They assisted in providing information on food regulations, governmental services, responsibilities, etc.

Topics dealt with at meetings:

- More Meals for Your Money
- Eating Sensibly
- Teen-Age Food Foibles
- Food Preservation
- Quantity Cookery
- Family Market Basket
- Weight Control
- Rapid and Smart Food Buying
- Food Fads and Misinformation
- Sanitation in Food Preparation
- New Food Products and Latest Food Development
- Pre Natal and Children's Nutrition
- Choosing and Cooking Meat
- Standards for Baked Products.

The demand for individual assistance increased from special groups such as special diet cases, the aged, working mothers, Welfare and low income families. Specific requests from Institutions such as the newly established Provincial Nursing Homes, Auxiliary Hospitals, Child Care Homes, etc., were met.

Newspaper articles, newsletters, radio, TV demonstrations and lectures proved effective in extending up-to-date information on food and nutrition to wider audiences than possible through meetings.

Home Management

	No.	Attendance
Lectures and Demonstrations	260	5,325
Home Visits	51	
Home Management Groups	10 (222 members)	
Home Management Group Meetings	17	
Farm & Home Program Group Meetings	43 (21 groups)	
Home Visits (Farm and Home)	40	
Persons otherwise assisted	2,930	

Home Management Groups, Farm and Home Programs, workshops in Home Accounting and lectures made up the primary activities conducted by our staff.

400 more individual requests were handled compared to 1964 for unbiased information on purchasing large and small household appliances, furnishings, budgeting and methods of record keeping. Urban requests increased.

Home Accounting Workshops were requested by several groups and conducted for the first time.

Six District Home Economists worked jointly with District Agriculturists in conducting local Farm and Home Programs.

Mass Media (TV and radio) was used more extensively this year in promoting home management. District Home Economists continued to emphasize the importance of home management by incorporating various aspects of home management in many of the activities they conducted.

A number of these programs incorporated subjects such as: "Homemakers Past and Present", "Consumer Credit", "Home Safety", "Management of Time and Energy" and "Buymanship of Food, Clothing and Equipment".

Upon request by individuals and families on Welfare, the Home Management Specialist also conducted home visits to assist in working out budgets and to discuss ways to manage money wisely.

Clothing and Home Sewing

	No.	Attendance
Sewing Clinics (3 days or more)	71	2,816
Sewing Clinic (1 day only)	9	157
Clothing Construction Course		
—Part A	74	1,212
—Part B	71	886
—Part C	41	526
Demonstrations and Lectures	273	6,539
Individuals Assisted	1,973	
Home Visits re: Clothing	287	

A new sewing instruction course which was initiated in 1964 came into general use in most districts in 1965. The Clothing Construction Course was developed to provide step by step instruction so that individuals could progress systematically from simple techniques to the more advanced. A homemaker who has completed the course, will have learned the basic techniques necessary to sew for a family and a home.

Interest in care and handling of modern fabrics remained keen. This topic dominated lecture material.

Handicraft

	No.	Attendance
Lectures and Demonstrations	100	3,059
Individuals Assisted	731	

There was an increase in the number of demonstrations and lectures in handicrafts in 1965. Greater interest in creative handicraft was aroused by a slide series emphasizing good design and development of original design with particular stress on counted thread embroidery. Handicraft displays were judged at fairs and conventions.

Home Design

	No.
Lectures and Demonstrations:	
(a) Housing (6 television)	39
(b) Decorating (5 television)	66
TOTAL Attendance	2,525
Homes Planned:	
(a) Complete	183
(b) Partial	133
(c) Building and Finishing Materials	264
(d) Storage Areas	119
Homes Remodelled:	
(a) Complete	23
(b) Partial	131
(c) Utility, Kitchen and Bathroom	150
Major Improvements	32
Persons Assisted: (Color, House Plans & Home Furnishings)	2,256
Total Home Visits: (Home Planning, Decorating and Remodelling)	797

Individual requests for assistance increased 27% over last year. Requests for plans draughted for new rural homes as well as remodelling and decorating have increased substantially.

An additional Home Design Specialist was appointed so that the province could be divided into two regions. In June, the new office was established at Calgary.

To reduce travelling costs and time, a series of office interviews at the district offices was arranged by field staff. In this way, more rural people were assisted in one day.

New topics were: "Good Design Costs No More", "Modern Furniture versus Traditional Furniture", "Let's Design a Bathroom". The bulletin "Costs of Canadian Housing" was revised to 1965 scales.

The Calgary Home Design Specialist attended a one week course in House Construction at the University of Illinois, Urbana, Illinois.

Filming for the television program "This Business of Farming" was completed for viewing in January with a fifteen minute section on housing. The balance of the one hour show will include Farmstead Planning and Beautification involving the Home Design Specialist.

"Progressive Farming Days" at Olds has been expanded this year to include a display on housing. Planning meetings have been conducted and displays arranged.

4-H Girls' Clubs

District Home Economists organized and supervised 4-H Girls' Club work in their districts. They were assisted by Specialists and summer staff in conducting such functions as achievement days, rallies, camps, judging and public speaking competitions. Some of the District Home Economists assisted with provincially organized 4-H functions.

District Home Economists report more time was spent in the office to organize for increased 4-H activities, e.g., Recommendations for Scholarships, Exchange Programs, Visiting and Outgoing Delegations, References for 4-H members, etc.

Number of 4-H Homemaking Clubs	185
Number of Lectures and Demonstrations	805
4-H Functions Attended	796
Total Attendance	42,416
Home Visits re: 4-H and other Junior Work	399

Other Activities

District Home Economists co-operated with other departments and organizations including Departments of Welfare, Attorney General, Health, Education, Indian Affairs, Industry and Development, Cultural Activities and Recreation and Centennial Program Divisions; Chambers of Commerce, Municipal County Government, Agricultural Societies, Service Boards, Exhibition Associations, Co-operatives, Kiwanis, Rotary, Provincial and local organizations of W.I.'s, W.A.'s, F.W.U.A.'s, C.A.C., C.G.I.T., Scouts, Girl Guides, F.U.A. & C.D.A., County Development Teams, Provincial Breed Associations, Agricultural Producer Associations, Horticulture Societies, Potato Growers, Seed Cleaners, Sheep and Swine Breeders, Frozen Food Association, Radio & TV Stations, Local and Provincial Civil Defence, Bowden Institute, U. of A., Y.W.C.A., Y.M.C.A. and A.R.D.A. Committees. These were helped through individual assistance and by giving demonstrations and lectures and arranging programs at 151 meetings, attended by 4,762 persons as well as assistance at planning and organizing meetings.

The Department of Welfare was assisted by the revision of Scales of Allowances for food and clothing used in Welfare and Municipal offices throughout the Province. Also, 9 meetings were attended, 36 Welfare families requiring 23 home visits, and 161 individuals guided at the request of Welfare.

Ten District Home Economists worked jointly with the District Agriculturists in establishing or meeting with 12 Advisory Extension Councils (185 members) and 14 Home Economics Advisory Committees holding 45 meetings.

District Home Economists co-operated with D.A.'s or worked separately in organizing or addressing 51 Short Courses attended by 3,529 persons and 29 Field Days and Tours for 2,010 persons. At 101 meetings attended by 4,482 persons topics dealt with were:

Women and Farm Management
Understanding our Children and Teen Agers
Youth Guidance and Careers
Program Planning for Group Meetings
Wills and Estates
Child Development
Family Living
Gracious Entertaining
Farmstead Design
Decision Making

Individuals assisted re: above topics—1,206. District Home Economists arranged 19 Exhibits and acted in an advisory capacity for Fairs and Conventions as well as judging and addressing these events. Other special functions attended (public relations) numbered 214.

Services of this Division were outlined at 121 meetings attended by 4,200. Agricultural and Vocational College Courses were outlined at 22 meetings and information given 2,037 persons.

Information and Publicity

There was a marked increase in the number of District Home Economists involved in regular weekly local programs for radio and TV and in the number and length of programs. One series of weekly 30 minute TV programs is estimated to have an average viewing audience of 15,000 or 5,725 homes. While TV programs require considerable time for preparation, one result has been a notable increase in individual requests for information by phone, letter and office interviews from persons who have not used this service.

Three, one minute consumer information radio notes were taped each week for "Call of the Land".

Newspaper Articles Written	884
Number of Newspapers Using Articles	96
Radio Releases	70
TV Releases	32
Radio Talks and Interviews	203
TV Talks, Demonstrations and Interviews	46
Newsletters Written	132
Total Average Circulation	18,520
Publications Distributed	75,219

New Publications Prepared:

- Wild Game Cookery
- Your Home Laundry Guide
- Clothing Construction Procedures
- Farm House Plans—Designed for Alberta Living
- List of Sources of Information for Clothing
- List of Sources of Information for Home Management
- List of Sources of Information for Home Planning and Home Decoration
- Low Cost Menus
- Household Inventory
- Home Accounting Workshop Outline

Revised Publications:

- The New Fabrics
- Costs in Canadian Housing
- How to Score Your Kitchen Plan

The summary of statistics below reflects frequent interruption of service because of resignations, transfers and vacant offices; more time devoted to radio and television programs; more intensive treament of subject matter and less individual service.

Summary of Activities

	1964	1965
Demonstrations, Lectures, Field Days and Short Courses	2,665	2,640
Fairs and Conventions	183	107
Total Attendance	107,982	94,631
Letters requesting information	16,388	17,068
Home Visits	2,810	2,170
4-H Girls' Clubs	207	185
Office Interviews	7,115	6,548
Phone Calls for Information	15,199	15,002

RADIO AND INFORMATION DIVISION

General

Topical information for Alberta farmers and homemakers was provided by the Radio and Information Division again in 1965.

Information for farm and home releases through press, radio and television was obtained from personnel in many fields of agriculture. The excellent co-operation received has been both gratifying and appreciated.

A policy providing limited sponsorship of radio and television programs, approved on a trial basis in 1964, was continued. This resulted in a greater use of radio and television by department personnel. Arrangements for these programs and relations with the co-operating stations were co-ordinated through the Radio and Information Division. This policy provided the guide-lines for District Agriculturists and District Home Economists to participate in a daily television program at Lethbridge, weekly television programs at Red Deer and Lloydminster, a daily morning radio broadcast at Red Deer, a daily radio broadcast at Peace River, and a weekly radio broadcast at Camrose. The morning radio broadcast at Red Deer was discontinued during the year.

The Division assisted with the co-ordination and publicity arrangements for Department Activities including an irrigation policy conference in Taber, the opening of the Regional Veterinary Laboratory at Lethbridge and the Agricultural Products Marketing Council. Several informal press conferences were arranged for Alberta farm writers to meet with the Minister and Deputy Minister. In co-operation with the Regional Resource Co-ordinator at Edson, a two-day tour of the A.R.D.A. project in C.D. 14 was arranged for Alberta farm writers. 17 farm writers attended this function, designed to acquaint them with the objects of the A.R.D.A. program and the methods being used to implement it.

The Supervisor attended a week long in-service communications training course at Banff in May and assisted with the lectures on radio and television. Other speaking engagements included "The Role of Radio in Our Society" for a panel discussion at the seminar session of the F.U.A. Goldeye Lake camp and "Public Relations & Communication" at the Alberta Poultry Industry Conference. Other assistance in the field of communications training was provided for the staff on an individual or office basis as requested.

Agricultural Weather Forecasts

This was the fifth season of Farm Weather Forecasting sponsored jointly by the Alberta Department of Agriculture and the Dominion Public Weather office located at the Edmonton International Airport. The forecast was issued at 10:00 a.m. six days a week beginning May 10, 1965 to September 25, 1965. A total of 119 forecasts were issued during this period.

Forecasts began with a "Farm Weather Synopsis", a normal synoptic discussion with an agricultural interpretation. This included weather conditions of the current day, along with references to the expected weather for the next two, three or four days. A second section was composed of a regional forecast for the following day with an outlook for the third day. Only on 52 occasions did forecasters consider that conditions and basic information permitted an outlook for more than three days.

A verification study at the end of the season showed that third day forecasts were a little less accurate than in 1964. About half of the forecasts could be graded as very good and another 25% classed as useful. However, one out of four forecasts were sufficiently inaccurate to be useless or even detrimental to a farmer planning work three days in advance.

Nevertheless, the forecast continued to prove very popular with the radio stations and their listeners. Harvest was not complete when the forecast had to be terminated for the season. Radio stations immediately requested an extension of the agricultural weather forecast because of the purpose they felt it served in their areas.

Science and the Land

Fifty-one reports on research projects were released during 1965.

Periodic visits were made to the Research Station, Lethbridge; the Faculty of Agriculture, University of Alberta; the Experimental Farm, Lacombe; Soils Substation, Vegreville; and the Research Station at Beaverlodge. Discussion with scientists about their work and results formed the basis of Science and the Land.

Farm Notes

Farm Notes, prepared by the Information Officer, continued to be well received. Continued requests to be placed on the mailing list for both Farm Notes and Science and the Land indicate the popularity of these two publications. A 'picture page', illustrating some of the story material, was included in some issues of Farm Notes in 1965. Glossy prints were made available to the editors on request. Picture stories appeared to be published more than the others, indicating the desirability of increasing this service.

During the year, 52 issues of Farm Notes containing 303 items of farm and home interest were released.

News Releases

There was a continued demand during 1965 for news releases to meet special needs. This resulted in the editing and distribution of approximately 30 special releases. They were widely used by most outlets, and the farm press in particular, continued to express their appreciation of these.

A monthly resume of "Coming Events" was prepared occasionally to publicize meetings and short courses sponsored by the Alberta Department of Agriculture. This release was presented in a form which enabled radio stations to use the announcements as "fillers". The material was used extensively on commercially sponsored farm programs on local stations and the CBC provided radio time each morning for this public service feature.

Television

The Alberta Department of Agriculture again co-operated with the other prairie provinces, the three prairie universities, and the C.B.C. to produce the television short course, "This Business of Farming" for viewing in January 1966. There was no comprehensive audience survey following the 1965 telecourse but an evaluation conducted by District Agriculturists through telephone interviews with farmers indicated the program had improved in some respects as far as farmers were concerned. Farmers said they preferred the farmer interviews and film of farms rather than the lecture oppproach that prevailed for much of the first short course. Approximately half of the viewers felt the local follow-up programs were worthwhile.

The theme for the 1966 telecourse was "reducing the risk". Program topics included farmstead planning and beautification, wintering the beef herd, small farm improvement, income stabilization, and farm business organization. The program on farmstead planning and beautification was the responsibility of the Alberta Department of Agriculture while the remainder of the programs were in the main the responsibility of the other provinces. Arrangements were completed for daily follow-up programs on the Lethbridge, Red Deer and Lloydminster stations. Commercial firms and farm organizations again co-operated in publicizing and promoting the telecourse.

The Division, in co-operation with the Film and Photographic Branch, Department of Industry and Development, provided 1,400 feet of film coverage of Alberta's achievements at the Royal Winter Fair to the province's eight television stations. Alberta was the only province to provide this service.

The Division also co-operated with the Film and Photographic Branch to make several short film items on technical agriculture for use by District Agriculturists on their TV programs or by television farm directors.

Radio Production

During 1965, "Call of the Land", ten minute, Monday to Friday farm broadcast, was aired 261 times on nine Alberta radio stations. The following stations carried the broadcast throughout the year.

CKUA	Edmonton	12:20 p.m.	CKSA	Lloydminster	12:50 p.m.
CFGP	Grande Prairie	12:05 p.m.	CJDV	Drumheller	12:50 p.m.
CFCW	Camrose	12:05 p.m.	CJOC	Lethbridge	12:00 p.m.
CKRD	Red Deer	12:45 p.m.	CHAT	Medicine Hat	1:05 p.m.
CKYL	Peace River	12:00 p.m.			

"Call of the Land" was discontinued on CFRN Edmonton at the end of March at which time the program was placed with CKYL Peace River.

The program was used primarily to publicize the services of the Extension Branch. Current information was also provided on Federal and Provincial agricultural policy and good farm management practices. Personality interviews were used extensively to provide closer association between research and extension personnel and the agricultural producers of Alberta. These were supplemented with agricultural editorials and news. Features of interest to urban listeners were included in the form of consumer and horticultural reports. Publicity was given to coming events and coverage provided for agricultural meetings and conventions.

Evaluation

The Bureau of Broadcast Measurement Survey provides an assessment of the program. Semi-annual reports indicated that 75 to 80 thousand households listened to the broadcast once or more a week. Discontinuation of the program on CFRN Edmonton, a station with a large urban audience lowered the survey figures. The program was carried in Peace River for the first time to a large rural audience not previously covered. The program was carried on choice noon time periods on all stations.

Programming

Efforts were made to provide coverage to all segments of the agricultural industry. The major source of program material originated within the Alberta Department of Agriculture. The following table indicates the nature and frequency of material used:

	No. of Programs
(a) Personality interview	433
(b) On-the-spot report	42
(c) Miscellaneous items and announcements	812
(d) Editorial—by commentators or guests	63
(e) Musical—special days—Christmas	1
TOTAL	1,351

Sources of personality appearances are indicated in the following table:

Alberta Department of Agriculture	251
Other Alberta Government Departments	22
Canada Department of Agriculture	67
University of Alberta	28
Farm People (including 4-H)	24
Other	41
TOTAL	433

A total of 1,351 items were used on the 261 programs. The following table provides a breakdown of the material and the number of separate topics dealt with during the year.

General Agriculture (including world & national items)	36
Livestock	288
Field Crops, soils and water	302
Farm safety	8
Farm management and Farm Economics	88
4-H	35
Poultry	23
Dairying	57

Veterinary Science	26
Horticulture	96
Agricultural Engineering	32
Agricultural Pest Control	32
Schools of Agriculture	12
Apiculture	2
Fur Farming	6
Home Economics and Extension	88
Miscellaneous (Announcements, etc.)	220
TOTAL	1,351

The majority of the program content is directed to the farm operator. During the past year however, one minute of each program was devoted to consumer information and horticultural items. Promotional material was provided for programs sponsored by agricultural organizations and extension courses in agriculture were widely publicized.

For the eighth consecutive year, interviews and reports from the Royal Winter Fair were released directly through the Alberta Government Telephones network to the nine participating stations. In addition, night press reports were provided for Alberta dailies.

"Call of the Land" was produced, recorded and distributed from the studios of the Radio and Information Division. A total of 4,069 farm broadcasts had been produced by December 31, 1965.

AGRICULTURAL ENGINEERING

The Agricultural Engineering Section was expanded by establishing a Regional Extension Engineer's office in Red Deer. The Calgary office was closed and a Regional Extension Engineer's office was opened at Lethbridge in order to obtain better representation throughout the province. A Regional Extension Engineer was also maintained at Grande Prairie. The Senior Extension Engineer and two Assistant Extension Engineers staffed the headquarters office in Edmonton.

This year Agricultural Engineers from the Agricultural and Vocational Colleges were not available. The new permanent staff were able to accomplish an increased volume of work because of the continuity of their service.

The new program of reducing the number of agricultural engineering schools dealing specifically with basic engineering subjects and concentrating on "production" schools was followed this year, because of the increased demand for this type of school. These schools were made possible by the excellent co-operation of all the branches concerned. The engineering aspects of an enterprise were discussed by an extension engineer, and management and other factors of a subject were handled by the appropriate specialists at the two day schools.

The four day farmstead machinery exhibit named "Mechanization Days" was organized with the co-operation of the district agriculturists, the Olds Agricultural and Vocational College, Commercial firms and the Extension Engineers. This event was held in the Farm Mechanics Building at O.A.V.C. and was extremely well received by farmers. Over 1,500 persons from all parts of Alberta viewed the exhibits during four days. This event was preceded by a series of "Materials Handling Schools" in the central part of the province to meet requests for information on this subject, and encourage farmers to attend "Farmstead Mechanization Days".

To meet the requests of the rural people the Rural Welding Clinics and the Tractor Maintenance Schools were continued. These clinics and schools were administered by the extension engineering section in co-operation with the Alberta Department of Education and Canadian Vocational Training Program.

A number of field days and demonstrations were scheduled during the spring and summer. Because of inclement weather a large number of these events were cancelled. The number of requests for specific agricultural engineering information, pertinent to individual farms, increased considerably and the number of farm calls was more than doubled. A number of individual farmstead, feedlot and other livestock enterprise plans were drawn to assist farmers in increasing their efficiency in production.

The requests for drainage surveys remained high and the extension engineers were able to meet these requests. The Division co-operated closely with the Water Resources Branch, P.F.R.A., and the Colonization Branch in order to provide a satisfactory drainage and land reclamation project for each farmer concerned.

The extension engineers worked with the Radio and Information Division in assisting the C.B.C. in producing the one hour program, Farmstead Planning and Beautification for the 1966 series, "This Business of Farming".

The Senior Extension Engineer is the Alberta representative on the Canadian Farm Building Plan Service, Plan Committee and spent a week in Ottawa with the Committee developing plans for this service.

The Extension Branch have recognized and encouraged professional improvement. The Extension Engineers participated in a one week course on farmstead mechanization conducted by the University of Saskatchewan, a one week course in communications and A.R.D.A. at the Banff School of Fine Arts and a one week course in agricultural economics at O.A.V.C.

The following tables summarize the Agricultural Engineering activities:

Schools	No.	Attendance
Farm Building (General)	6	180
Swine Building	3	49
Home Planning and Remodelling	9	303
Sewerage and Plumbing	5	75
Electrification	1	38
Machinery	2	51
Tractor Maintenance	6	121
Rural Welding Clinic	18	432
Beef Production	11	533
Swine Production	17	484
Dairy Production	2	55
Materials Handling	4	104
Mechanization Days	1	1,560
Others	4	134

Demonstration and Field Days	No.	Attendance
Water and Sewerage	2	61
Forage	3	132
Machinery	5	161
Building Tours	3	76
Dairy	1	110
General	No.	Attendance
Short Courses	13	339
Meetings	30	
Farm Notes	11	
Radio and TV Programs	25	
Plan Production	2	
Bulletins and pamphlets prepared	4	
Farm Calls	812	
Surveys	147	

OTHER EXTENSION PROGRAMS AND ACTIVITIES

FEDERAL-PROVINCIAL MANPOWER COMMITTEE

(Farm Labour Committee)

A change was made in the name of this Committee to comply with the terms of the 1965 Federal-Provincial Manpower Agreement. The Committee dealt mainly with the recruitment, transportation, and placement of Indian workers for the sugar beet and vegetable crops in Southern Alberta.

General

The shortage of skilled farm workers continued in 1965. Little dependence by farmers was placed on the doubtful chance of securing casual farm workers. Mechanization and automation took the place of non skilled and non available labour. Many requests for experienced farm workers could not be filled. Casual farm labour was in short supply mainly because of higher wages, shorter hours and so called fringe benefits offered by other industries.

Training of Farm Workers

The Agricultural Colleges conducted diploma courses for horticultural workers, A.I. technicians, dairy plant operators as well as the general Diploma Courses in Agriculture. These courses helped supply trained workers in these special fields.

Placement of Farm Workers directly through District Agriculturist offices

General Farm Workers	698
Harvesters	293
Married Couples	87
Farm Domestics	11

National Employment Service

District Agriculturists maintained a close liaison with the National Employment Service. Requests for farm labour were usually referred to the nearest N.E.S. office.

Indian Farm Labour Program

The Federal-Provincial Manpower Committee administered the recruitment, transportation, registration and distribution to beet growers of Indian workers. Considerable difficulty was experienced in the beet fields because of the very wet spring. However, the Indian workers again did a generally satisfactory job and accounted for at least half of the sugar beet field hand work.

More use was made of Indian workers in general agricultural work and in the vegetable industry, including canning factories. 81 Indian workers, some with families, remained on farms for year-round employment.

Fieldmen

The Federal-Provincial Committee employed two fieldmen during the busy spring and summer months to help with the placement and movement of Indian farm workers. One field man was used to conduct a housing survey for sugar beet workers to improve the quality of housing. Good co-operation was received from the growers in implementing recommendations from the survey.

Recruitment

The recruitment of Indian workers in Alberta was a real disappointment. Over 80% of the Indian workers used in 1965 came from Saskatchewan. A major reason for the difficult recruitment in Alberta was the competition from other industries employing Indians.

Total number of Indian workers employed in sugar beet field	2,237
No. of Indian beet workers registered under the Federal-Provincial program	2,081
No. of Indian workers transported to So. Alberta beet fields	1,442
Sugar beet growers using Indian labour	668
Amount earned by Indian workers for sugar beet work (est.)	$ 565,000
Amount Indian workers earned—vegetable industry and general farm work	$ 345,000
Total value of sugar beet crop to growers (estimated)	$7,000,000

A.R.D.A.

Rural Development Area—CD 14 (Edson)

The Regional Resource Co-ordinator was appointed on February 1st, and the office in Edson was opened May 24th. The Rural Development Home Economist was appointed June 15th.

Immediately after opening the office the Technical Panel, made up of representatives of all government agencies operating within the area, was called together and oriented regarding rural development and their role in it. Next, the Rural Development Research Team determined the five functional zones of the area, and ten reputational leaders within each. This group of fifty leaders was invited to form the Central Advisory Committee, and was guided through a series of meetings outlining the purpose, method, approach and responsibilities in the Rural Development program. The first regional action meetings in the new program have been organized and held in two zones. Initiation of the major action program awaits the publication early in 1966 of the district inventory drawn up by the Research Team.

Summary of Activities	No.	Attendance
Advisory groups	24	317
Other meetings relating to ARDA	107	2,519
Office Interviews	102	

AGRICULTURAL SOCIETIES

A renewed interest in the affairs of Agricultural Societies was indicated by increased attendance and more active participation in the Annual Meeting held December 6th in Edmonton. Mr. "Chick" Miller was again elected president.

Fairs held in 1965:

"A" Class — Calgary, Edmonton, Lethbridge, Red Deer.
"B" Class — Camrose, Grande Prairie, Lloydminister, Medicine Hat, Vegreville, Vermilion, Wetaskiwin.
"C" Class — Athabasca, Battle River, Benalto, Darwell, Donnely-Falher-Girouxville, Lougheed, Mayerthorpe, Olds, Pincher Creek, Priddis-Millarville, Vauxhall, Westlock, Wildwood, Willingdon.

Not Classified—Peace River.

Other Societies:

— Alix, Argyle (Claresholm), Barrhead, Cardston, Central Alberta (Lacombe), Drumheller, East Central Alberta (Coronation), Fairview, Hanna, High Prairie, High River, Lamont, Nanton, Okotoks, Rimbey, Rocky Mountain House, Spirit River, Stettler, St. Paul, Taber, Victoria Trail (Smoky Lake).

Prize Money and Grants

The Department of Agriculture increased the amount of money which could be earned as grants for approved agricultural prize awards as follows:

	1964 (maximum)	1965 (maximum)
"B" Fairs	$3,000	$4,000
"C" Fairs	$1,200	$1,500

The Federal Government for the first time, agreed to offer grants to "A" and "B" Fairs for an approved schedule of livestock classes. They agreed to pay 50% of the prize money paid out under the approved schedule. This new schedule decreased the number of classes for each breed of livestock but increased the prize money which could be earned for each entry. The new schedule was generally approved by the Fair Boards.

Summary of activities conducted:

Summer Fairs	31	Farm & Home Programs	5
Tillage Field Days	4	4-H Club Activities	55
Livestock Shows or Sales	41	Meetings, Short Courses	154
Seed Fairs	11	Other	243
Horticultural Shows	25		

MASTER FARM FAMILY PROGRAM

Four families received the coveted Master Farm Family award in 1965:

The Albert Seutter Family, South Edmonton.
The Mike Dupilka Family, Athabasca.
The Albert K. Sorensen Family, Berwyn.
The Allen I. Morison Family, Airdrie.

This brings the total number of Master Farm Families up to 63.

Alberta Master Farm Family Association

This Association was formally set up at the second reunion of Master Farm Families held at Lacombe Experimental Farm July 30th, 1965. 35 families were present. Plans were made for future reunions and activities of the Association. Those nominated and elected to the executive were:

Secretary—S. S. Graham.
Directors —Wm. McGillivray, Southern Zone, Wilf Edgar, West Central Zone, George Dechant, Peace River Zone, E. R. Lewis, Northern Zone, Lester Lohr, East Central Zone.

NAMES OF HOMES ACT

Number of homes registered in 1965	38
Total registrations for the province	585

ALBERTA IRRIGATION PLANNING BOARD

This Board continued to act in matters of new irrigation developments or extensions to present irrigation districts.

Board Members:

S. S. Graham—Chairman, Director of Extension.
G. Parlby—Secretary, Farm Economics Branch.
Earl Bowser—Senior Pedologist, Canada Dept. of Agriculture.
T. W. Manning—Head, Agricultural Economics Department, University of Alberta.
C. J. McAndrews—Colonization Manager, S.M.R.D. Branch, Department of Agriculture, Lethbridge.
Sam Blair—Farmer, Picture Butte.

PUBLICATIONS AND VISUAL AIDS

Major changes were made with relation to the operation of this Division. Mr. J. M. Fontaine was appointed Supervisor of Publications and Visual Aids taking over the position on December 1st.

A move was made to more adequate accommodation in the same building.

The "AGDEX" system of indexing publications was adopted.

Publications distributed by the Extension Branch:

Agricultural general	232,418
Homemaking	72,670
Individual building plans	23,576

Visual Aids:

An attempt was made to supply the Department staff with modern equipment for visual presentations at meetings, short courses and schools. The following equipment was available:

Movie projectors	11	Public address systems	8
Slide projectors	66	Overhead projectors	2
Film Strip projectors	3	Tape recorders	5
Cameras	54	Projection screens	50

Films available and use made of films:

No. of meetings at which films were shown	421
No. of films shown by Extension Staff	482
Films owned by Branch	69
Films on loan	91
Total audience viewing films	36,821

Report of the Veterinary Services Branch

J. G. O'DONOGHUE, V.S., D.V.M., Director
H. N. VANCE, V.S., D.V.M., Assistant Director, Laboratory Division
G. R. WHENHAM, V.S., D.V.M., Assistant Director, Field Division
*F. E. GRAESSER, B.S.A., V.S., D.V.M., Veterinary Histopathologist
*G. S. WILTON, V.S., D.V.M., Veterinary Pathologist
*J. HOWELL, V.S., D.V.M., Veterinary Pathologist
*G. A. CHALMERS, V.S., D.V.M., Veterinary Microbiologist
*W. N. HARRIES, B.V.M.S., Veterinary Pathologist
E. W. GILCHRIST, M.R.C.V.S., Veterinary Pathologist
J. P. BEST, V.S., D.V.M., Supervisor, Veterinary Inspection
W. P. BRISBANE, V.S., D.V.M., Supervisor, Brucellosis Control
K. R. MacDONALD, V.S., D.V.M., Emergency Measures Officer
C. DAVIDSON, B.Sc., Laboratory Scientist
S. A. HUNTER, B.Sc., Laboratory Scientist
J. WOOD, B.Sc., Laboratory Scientist

A. GENERAL

This was a historical year for the Branch with major staff changes and the opening of the first regional laboratory at Lethbridge. Dr. E. E. Ballantyne, who was appointed Director of the then undeveloped Branch in 1947, was named Deputy Minister, February 1, 1965. Under his direction the offices of Provincial Veterinarian and Animal Pathologist had been consolidated, and the Branch expanded to meet the demands for its services.

Staff changes resulting from Dr. Ballantyne's promotion, and the resignation of Dr. H. C. Carlson, who left to join the faculty of the veterinary college at Saskatoon, presented problems. Recruitment of suitable personnel has been difficult and not all vacancies have been filled. New veterinary staff were Dr. E. W. Gilchrist, with Drs. G. Klavano and W. Dorward to report for duty January 1, 1966. There was also a number of changes in technical personnel. Some work and projects were either curtailed or delayed.

The Veterinary Diagnostic Laboratory, Lethbridge, was officially opened by The Honourable Harry E. Strom, Minister of Agriculture, October 13, 1965. This attractive, well equipped facility, staffed by two veterinary pathologists supported by Technical help extended the services capabilities to a considerable extent. Dr. W. N. Harries was placed in charge.

The proposal for a consolidated laboratory in Edmonton to include veterinary, dairy, field crops, soil and feed testing, and other branches with laboratory functions was approved. This unit, named the Agriculture and Wildlife Laboratory, has advanced past preliminary planning stages. Dr. H. N. Vance was named Chairman of the Planning Committee.

The new College of Veterinary Medicine, University of Saskatchewan admitted its inaugural freshmen class. Thirteen

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*Head of a Section.

Albertans were accepted in the limited enrollment of 33 students. With the establishment of a western college, changes were made in the policy of aid to veterinary students. In return for a quota of students, the Department agreed to make an annual grant of $2,500 to the College for each Alberta student as a contribution to instructional costs. The existing direct student grant of $300 will be phased out, with students enrolled at other faculties prior to September 1, 1965, receiving the grants for the remainder of their undergraduate training.

Arising out of two meetings of representatives of Departments of Agriculture and Universities of the four western provinces, was the establishment of an Advisory Board to the College. The Ministers of Agriculture and Universities were each to name one representative. Alberta delegates named were Dr. J. G. O'Donoghue, Director, Veterinary Services and Dr. D. R. Clandinin, University of Alberta. The first meeting was held in Saskatoon, September 10.

The slow westward extension of rabies, primarily in skunks, in southern Saskatchewan led to the reactivation of the Central Rabies Control Committee. The nearest confirmed case was approximately 120 miles east of the Alberta boundary. With the cooperation of the Pest Control Officers engaged in rat control, Lands and Forests officials and others, the area of south-eastern Alberta has been carefully watched. Shipping container depots for suspect specimens were provided.

In late November, the first positive rabies diagnosis in the province since 1957 was made in a dog from Kathleen in the Peace River District. No additional cases have been reported.

The continuous surveillance throughout the province is illustrated by the 38 specimens submitted to the Federal A.D.R.I. Laboratory, Lethbridge. These included dogs, cats, skunks, bats, coyotes, rabbits, and a badger.

Perhaps due to the wet summer, equine encephalomyelitis had its highest incidence in the prairie provinces in many years. The disease appeared suddenly the last week of July and continued to mid-September. Total cases in horses exceeded 300. With the cooperation of the Public Health Laboratory, confirmatory diagnosis by rising blood titres demonstrated in two blood specimens from affected animals or by virus isolations from brain tissue was made in 59 instances.

The initial blood testing for the Federal Brucellosis Control Program was completed, but not all areas have as yet been certified. Calfhood vaccination, under the provincial regulations, reverted to a voluntary program in 7 municipalities, with accompanying changes in grant structure. Increasing cattle population has resulted in a total of 471,762 calves being vaccinated with Strain 19 Brucella vaccine, little decrease from 1964, when vaccination was compulsory in all areas.

The total livestock inspected at "D", "E", and "F" stockyards remained quite close to the 1964 total at 956,587. The total rejected and removed from marketing channels was 10,915.

A number of major study projects were carried out. The Branch cooperated with the Federal Health of Animals Branch in a calf scour investigation and independently expanded the terms of reference of the joint study. Scours in beef calves has been a serious problem the last three springs. A comprehensive survey on the effects of vibriosis was completed. The effect of frost bite on the breeding performance of range bulls was investigated. In cooperation with the Poultry Branch, a flock mortality survey commenced in 1964 was completed and investigations made of mycoplasma and coliform infections in a large broiler operation. Studies of swine health problems were also a major item, with particular reference to rhinitis, enzootic pneumonia, and certain aspects of S.P.F. swine.

The continuing demand for additional and more refined laboratory services is reflected by the 28,764 specimens examined. An addition this year was the 20,000 serological tests on turkey bloods from hatching egg supply flocks with an export market in California and Minnesota.

The first report of a predator study in the Rochester area, a part of an extensive wildlife study under the auspices of the University of Wisconsin, was received. This subject has great importance in the control of sylvatic rabies (wildlife).

The responsibility for emergency planning for the Department has been carried by Dr. E. E. Ballantyne. Dr. K. R. Macdonald was named Emergency Measures Planning Officer for Agriculture and was attached to the Branch.

The Branch continued to cooperate with other branches, departments, and agencies in all matters that related to diseases of animals or human health. The help and assistance of Extension, Livestock, Poultry, Field Crops, Dairy, Fur Farms, Lands and Forests, and Fish and Wildlife Branches is gratefully acknowledged. Appreciation is expressed to the Department of Health, Public Health Laboratory, Veterinarians, Feed Industry and Municipal officials.

More detailed information is given in the following report of Laboratory and Field Division activities. Additional technical data will be included in the Branch report.

B. FIELD SERVICES

This included the administration of official legislative programs, such as Brucellosis Control, Veterinary Inspection Services, Livestock Health Programs, the investigation of specific disease problems, field study projects and extension.

SUMMARY OF ACTIVITIES

Field Investigations	
Cattle	64
Swine	23
Sheep	1
Horses	5
Poultry	84
Fur Animals	18
Wildlife	3
TOTAL	198

Meetings	
Brucellosis	18
Domestic Animals	19
Poultry	10
Professional	21
Others	27
TOTAL	95

Inspections	
Livestock Markets	137
Stockyards	321
Livestock Medicines	345
Slaughterhouses	26
Swine R.O.P. Bonus	10
Swine Health Herd	69
TOTAL	908

Lectures	
University	63
Others	3
TOTAL	66

Individual Farm Visits	277

VETERINARY PERSONNEL

(a) Students

To compensate for the lack of veterinary faculty in western Canada, direct annual grants to students of $200 raised to $300 in 1960, have been paid since 1945. Approximately 160 Alberta students have received the assistance. With the opening of the western college, and the guarantee of equal opportunity for Alberta residents through the Department's tuition assistance grant direct to the College, the original travel assistance has been discontinued. Financial aid to students is available through loans, scholarships, and bursaries administered by the Department of Education.

(1) The veterinary curriculum is now four years in length, with a pre-veterinary requirement of two years university. Students currently enrolled in pre-veterinary studies:

	1st Year	2nd Year
University of Alberta, Edmonton	21	23
University of Alberta, Calgary	9	5
Lethbridge Junior College	1	......
Camrose Junior College	1	......
Medicine Hat Junior College	2	......
Red Deer Junior College	1	......
TOTAL	35	28

(2) Albertans attending veterinary colleges:

	1st Year	2nd Year	3rd Year	4th Year	5th Year
Saskatchewan	13	......	......	......	......
Ontario	......	3	4	10	12
Quebec	......	......	......	1	......
Washington	......	......	......	2	......

(b) Practising Veterinarians—150.

The number in private practices was 150 with a net loss of approximately 3 practices. However, multiple practices with large animal clinical facilities are increasing steadily with 5 new clinics built during the year, making a total of 40.

Brucellosis Control

All of Alberta, with the exception of seven districts, was under the Brucellosis Restricted Area program with the compulsory vaccination of heifer calves. The seven municipalities had completed five years of compulsory vaccination following the Federal blood test and reverted to voluntary vaccination.

The Federal Health of Animals Branch completed the first general blood test of all areas in the province on December 14, 1965. There are now 79 Brucellosis Certified Areas and the remaining areas should be certified early in 1966. The percentage of reactors to the Brucellosis test remained at .4% of all cattle tested in Alberta. Seventeen Certified areas were re-certified for a further three year period on the basis of check testing.

(a) Calfhood Vaccination

471,762 calves were vaccinated with Brucella Abortus Strain 19 vaccine. On March 31, 1965, the Livestock Diseases Act was amended to change the official vaccination age from 4 to 11 months or 120 days to 270 days. The new vaccination age met Federal and United States requirements with regard to "Official Vaccinates" and qualified animals for export purposes. The increased demand for our cattle to the United States necessitated the issuing of duplicate vaccination certificates for approximately 25,000 cattle. The accompanying graph shows the number of calves vaccinated in Alberta during the past 20 years. (Chart I).

(b) Brucellosis Restricted Areas

The following areas completed five years of compulsory vaccination following the commencement of Federal blood testing and reverted to voluntary vaccination on the farms. The Municipal Districts of Starland #47, and Kneehill #48 along with the Counties of Mountain View #17, Wetaskiwin #10, Beaver #9, Stettler #6, and Lacombe #14 were taken off the Brucellosis Restricted Area Plan. Departmental grants were reduced from 65 cents per calf to 50 cents in the voluntary areas. Although vaccination on the farm in these areas was voluntary, vaccination at all Class "D" Stockyards within the seven areas remained compulsory, with the Department paying the whole cost of vaccination at 75 cents per calf.

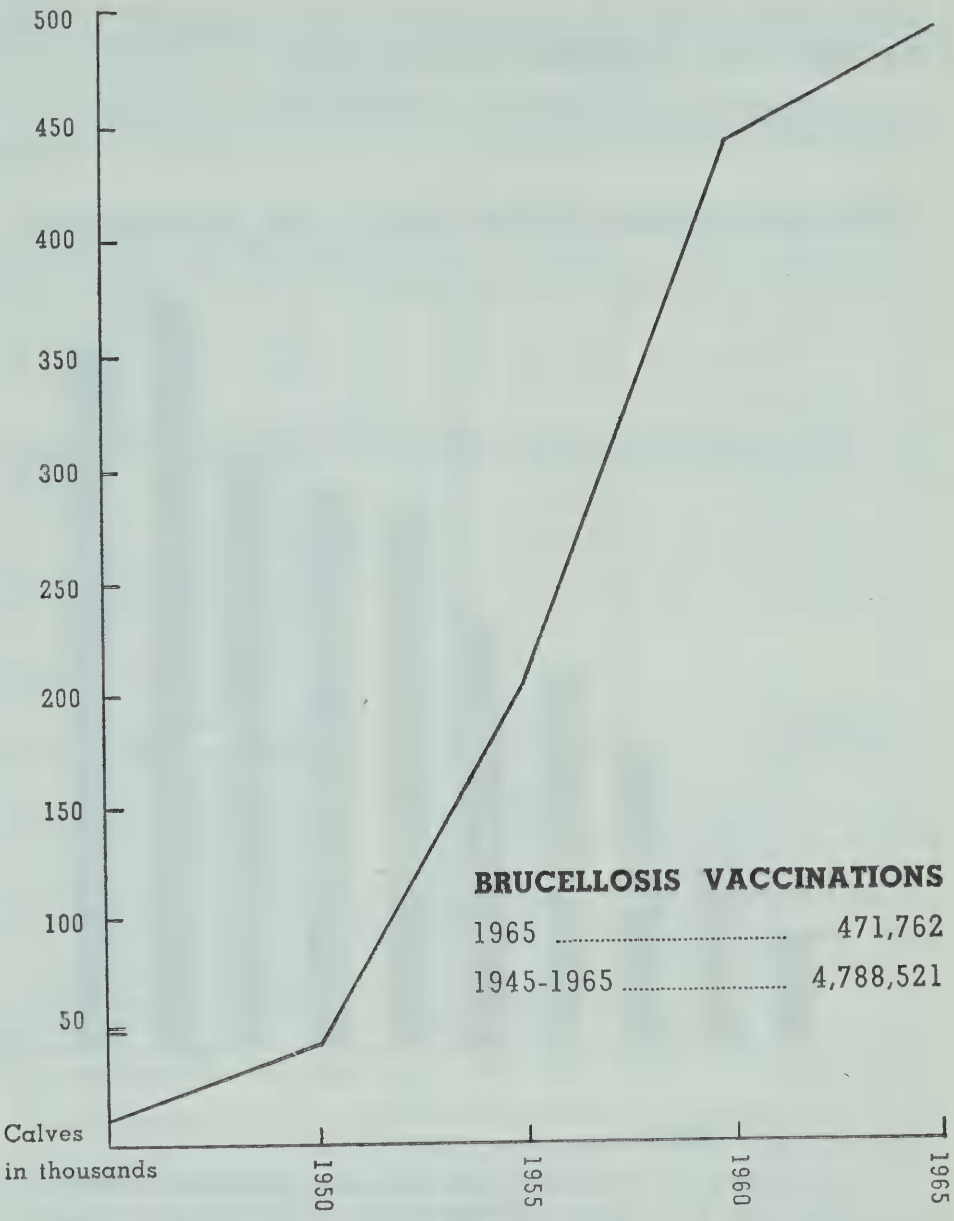
The vaccinations and administration of the Program were carried out by 158 Veterinarians, and 67 Field Supervisors, appointed Inspectors under the Livestock Diseases Act.

Veterinary Inspection Service

December 31, 1965, marked the completion of ten years of veterinary inspection at auction markets in Alberta.

This service was started on January 1, 1955. The first year 155,540 animals were inspected, by 1965 the volume of livestock passing through the inspected markets had grown to 956,587, over 600% of the original number.

The chart on page 196 illustrates the service rendered over the last ten years.



BRUCELLOSIS VACCINATIONS

1965	471,762
1945-1965	4,788,521

One new market at Stavely came under inspection. The buildings at Grande Prairie were destroyed by fire in June and since have been built with concrete block. The markets at Strathmore and Bow Island closed, and the one at New Sarepta reopened during the year.

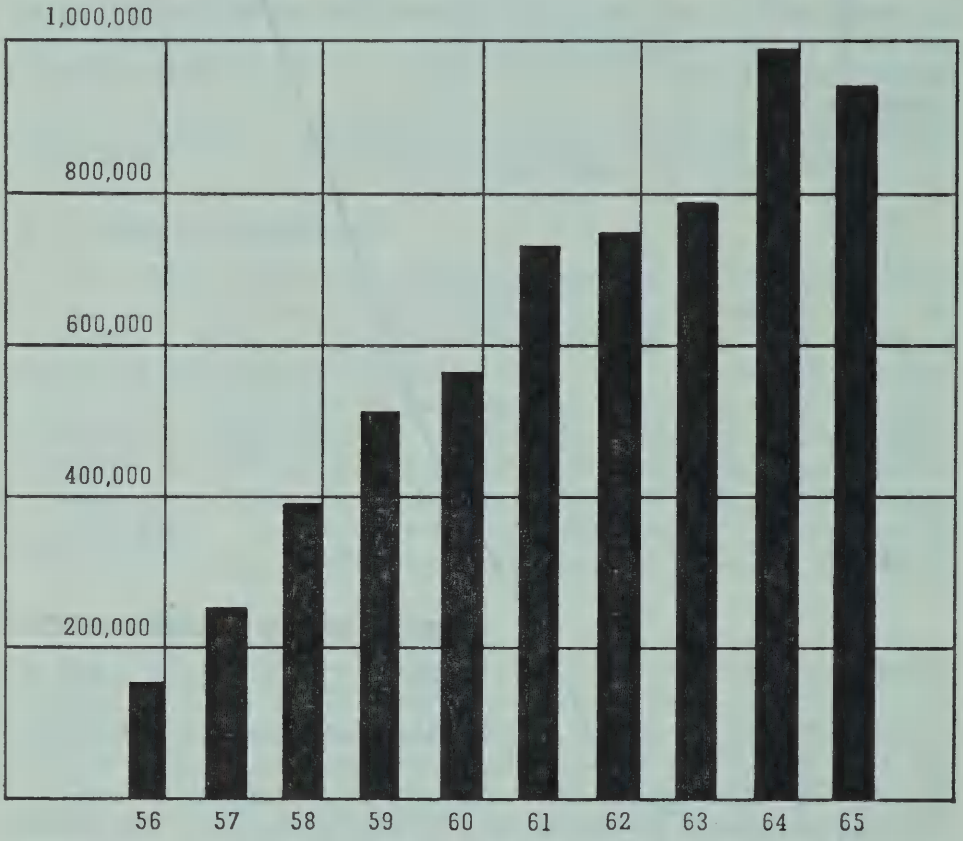
Sixty markets were under inspection during 1965. It required 4,075 man days by the practising veterinarians to inspect the total of 956,587 animals. An additional 139 days were required for sanitary inspection.

Mastitis and Cancer Eye are still the most frequently recorded reasons for rejecting cattle. Rhinitis and Mange rule supreme in the swine disease kingdom.

Total rejections were 10,915 animals. With the completion of the Brucellosis testing programme, the need for Section 18 in Regulation 57/59 disappeared; this is the last report in which rejections under this Section will be reported.

In addition, 31 Class "C" and 210 Class "G" stockyards were under supervision.

Livestock Inspected at Class "D", "E" and "F" Stockyards



Educational Courses

Individuals do a better job of disease prevention when well informed. The Fifth Annual Feed Industry Conference was held in cooperation with the Industry and the University of Alberta, Department of Extension. The fifteenth 3-day Hatcherymen's Course was held in cooperation with the Poultry Branch. Assistance was given to the W.S.G.A. in planning their second Stockmen's Short Course of one week's duration at the Banff School of Fine Arts.

The Livestock Medicine Regulations

Three hundred and eighty-seven outlets were licensed during 1965, an increase of forty-seven from 1964. Three hundred and forty-five inspections were made of licensed outlets and premises of new applicants. Premises which were not complying fully with the regulations were found to be a minor nature and corrections were usually made on the spot. Three unlicensed outlets were investigated and they discontinued the sale of livestock medicines.

The Advisory Committee met twice during the year to consider new applications and discuss changes in the regulations. No significant changes were made in the regulations.

Biologics, antibiotics, scour treatments and swine anemia preparations comprised the greater part of retail sales of scheduled items.

Under Poultry Vaccine Regulations, licenses to sell Infectious Bronchitis and Newcastle Disease Vaccines were issued to 28 Pharmacists, 14 Hatcheries and 18 Veterinarians.

Licensing of Slaughterhouses and Humane Slaughter

Under Licensing of Slaughterhouses and Humane Slaughter, twenty-six slaughterhouses were inspected regarding method of slaughter only. The majority of those inspected were found to be using a Stun-Safe cartridge in a .22 calibre rifle. Eighty-three slaughterhouses were licensed. Regulations were amended to waive the license fee for slaughterhouse operators licensed under the Frozen Food Act.

Rabies Control

Because of the approach of rabies in skunks through southern Saskatchewan within about 120 miles of Alberta's eastern border, it was deemed advisable to ensure that any suspect animals would be submitted for examination. Consequently, our Livestock Medicine Inspector accepted the responsibility for sending out specimen containers and history forms to 32 points in southeastern Alberta. Rabies Control depots consist of Pest Control offices, District Agriculturists' offices, and Forestry offices. These depots are being maintained by the replacement of a container each time it is forwarded with a specimen.

Swine Herd Health Program

At a meeting of the Advisory Committee the name of this program was changed to the above and altered from that of a certified disease free to a minimal disease status. In addition, plans were laid to test a representative group of sows from each herd for Brucellosis and Leptospirosis. At the end of the year 32 herds were enrolled. The herd health was based on 69 unannounced herd inspections and the examination of specimens from market hogs.

As a complementary project, inspections and examinations were made on groups of S.P.F. pigs at the two R.O.P. stations. This was in view of the fact that all S.P.F. herds nominated for R.O.P. tests were also enrolled in our program. All told, 128 pigs were involved in this R.O.P. test project.

Disease Reporting Statistics

To complement information gathered from laboratory submissions, and direct from livestock owners, a procedure for morbidity and mortality reporting was maintained. Selected veterinary practices cooperated representing approximately 10% of veterinary service calls made in the year. The system did not provide for the reporting of losses where veterinarians were not consulted.

Monthly returns were processed covering calls to 9,437 premises.

Agricultural Emergency Measures

Saving human lives has first priority in Emergency Measures activities in case of a national emergency. The provision of safe, wholesome food is the second priority; and in fact, it is an integral part of the first. This food would have to come from farm productions very early in an emergency. According to calculations, Alberta and the rest of Western Canada could have vast food resources that would be uncontaminated by radio-active fallout. But some would be contaminated directly, and indirectly, through the soil, forage, and animals raised in a fallout area. Normal marketing and processing could be seriously affected.

The Alberta Department of Agriculture Emergency Measures Plan was designed to take care of the problems mentioned above, as well as assisting in case of biological and chemical warfare. The plan was the first one designed for agriculture in Canada and served as a model for other provinces. It provides for full cooperation and integration with the Federal Department of Agriculture in Alberta to work as an integrated agricultural unit.

This plan, and individual plans for each zone headquarters was completely up-dated with regard to staff assignments and resources analysis of each Branch of the Department.

Lectures were given by the Deputy Minister, the Director and the Emergency Planning Officer to orientation, radiological and nurses courses at the Alberta Civil Defence School. In cooperation with Federal Agricultural staff, the Emergency Planning Officer planned and directed Agriculture's role in two Zone Headquarters Exercises, the Director one Exercise. Additional professional staff received training at Canadian Civil Defence College. A new concept of E.M.O. training was started by selecting five outstanding farmers, from Extension Branch recommendations, for courses at C.C.D.C., Arnprior. The E.P.O. attended an Agricultural Officers' Course at Arnprior.

"Emergency Passes" were issued to Regional and Relocation Headquarters personnel.

C. LABORATORY SERVICES

The primary responsibility of the laboratory division was to provide a diagnostic service to the livestock industry. The laboratory provided equipment and specially trained personnel not available in private clinics or practices. This enabled us to use specialized diagnostic techniques most essential as a second line of defence against livestock diseases.

To have maximum value in disease control, the reports of examinations must be accurate, detailed, and dispatched quickly upon completion. New tests are continually being put into use. Improvements in techniques, staffing, and equipment were made to fully utilize the research information becoming available to us. To keep abreast of the medical sciences and new diagnostic methods, a regular program of seminars and conferences was carried on for the professional staff. A library of 20 periodicals in veterinary medicine and allied fields also aided us in meeting this responsibility.

The laboratory division attempted to have its staff members spend a portion of their time on field work in the form of consultations with veterinary practitioners and other disease investigations. This is important with reference to our maintaining contact with changes in the industry at the producer level and as a further service to livestock owners and veterinary practitioners.

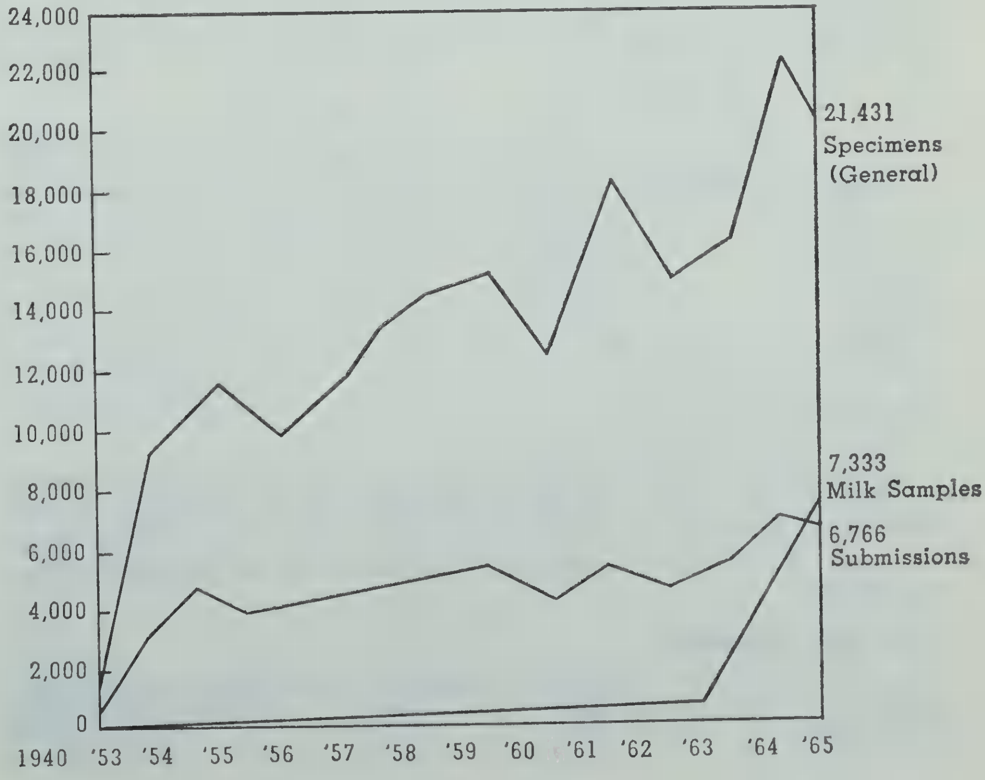
Other responsibilities undertaken included some extension work in the form of meetings, radio tapes, field days, and press releases.

Lethbridge Laboratory

The Lethbridge Regional Diagnostic Laboratory was officially opened October thirteenth, culminating many months of planning. A steady flow of specimens began coming to the laboratory as soon as the doors were opened, and the work has steadily increased since. Four hundred and eighty-two specimens from 208 submissions were examined.

TOTAL NUMBER OF SPECIMENS AND SUBMISSIONS

(Excluding Bloods)



The graph on page 199 indicates the general increase in the numbers of submissions and specimens examined during the history of the Edmonton laboratory. A total of 21,431 general specimens representing 6,766 consignments were examined in 1965. In addition there was a total of 7,333 milk samples examined.

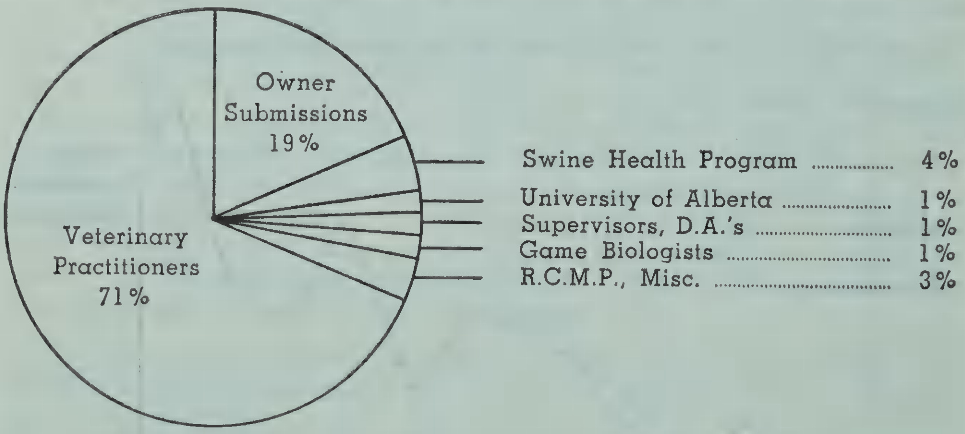
Species

Following is a list of the domestic species and numbers of specimens examined from each. While these accounted for the bulk of the work load, a wide variety of wildlife species were also examined.

Swine	3,851
Cattle	2,890
Sheep	151
Horses	291
Canine	703
Feline	256
Chickens	7,914
Turkeys	1,638
Others	628 (avian)
	2,943 (animal)
TOTAL	21,263

Animal Disease Section

The Animal Disease Section examined 9,961 specimens from a total of 4,058 consignments or premises (excluding the Brucellosis blood samples). The circle graph reveals that practising Veterinarians made 71% of the submissions while the remaining 29% were made by the other professional groups or owners.

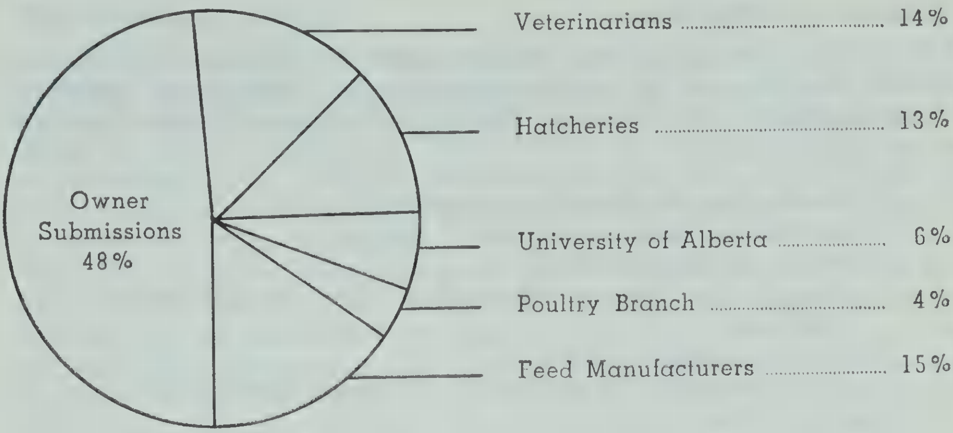


Poultry Disease Section

The Poultry Disease Section is responsible for the diagnosis of diseases in birds. 1,656 submissions were received; 12,789 specimens from 39 avian species were examined. The chart on page 201 illustrates the distribution of the submitters of the specimens.

Prominent Diseases

Generally, the diseases of economic importance in the province were diagnosed with approximately the same frequency as in 1964.



Pneumonia and diseases of the digestive tract continued to be of major importance in most domestic animals.

Western Equine Encephalomyelitis reached serious proportions during the summer. Of 245 blood samples received from suspected cases of the disease, 90 were paired samples, with 56 positive, 15 suspicious and 19 negative reactions recorded. Thirty-five brains were received, with 13 positive on histopathological examination.

Leukosis dominated the poultry disease picture. Respiratory diseases decreased over all, although air sac infections in turkeys continued to be a large source of loss.

The following table illustrates the most common diseases in the indicated species. The figures represent the number of premises on which the conditions were diagnosed: (1964 figures in brackets).

Cattle:

Blackleg	59 (54)
Bronchopneumonia	118 (105)
Colibacillosis	113 (37)
Johne's Disease	5 (9)
Lungworm	20 (5)
Malignant Edema	43 (35)
Mixed Clost. Infection	32 (10)
Pulmonary Emphysema	9 (15)
Virus Diarrhoea	12 (10)
Vitamin A Deficiency	42 (32)
White Muscle Disease	21 (19)

Swine:

Anemia	31 (27)
Bronchopneumonia	104 (152)
E. Coli Infections	83 (81)
Edema Disease	43 (30)
Encephalitis	5 (19)
Enteritis	64 (50)
Erysipelas	40 (43)
Gastro-Enteritis	41 (54)
Mulberry Heart Disease	25 (43)
Necrotic Enteritis	29 (24)
Vibrionic Dysentery	20 (......)

Poultry:

Air Sac Infection	89 (190)
Capillaria Worms	21 (38)
Chronic Respiratory Disease	24 (117)
Coccidiosis	55 (64)
Deficiency Diseases	86 (173)
Leukosis	187 (269)
Omphalitis	61 (107)
Transmissible Enteritis	12 (122)

Mink:

Aleutian Disease	17 (9)
Distemper	9 (7)

Sheep:

Pneumonia	15 (12)

Canine:

Distemper	18 (22)
Inf. Canine Hepatitis	5 (8)
Pneumonia	4 (5)

Special Investigations

Disease problems occasionally arise which cannot be investigated adequately by routine procedures. Within the limits of time and facilities available, the following special investigations were undertaken:

- Western Equine Encephalomyelitis Survey
- Clostridium Novyi Infection of Cattle
- Aleutian Disease in Mink
- Survey of the Bovine Alimentary Tract for Clostridium Perfringens
- Vibriosis in Beef Herds
- Serum Glutamic Oxalo-Acetic Transaminase (S.G.O.T.)
- Calf Scours
- S.P.F. Pigs at R.O.P. Test Stations
- Frozen Testicles in Bulls
- Broiler Flock Mortality Survey
- Atmospheric Sampling of Broiler Houses
- Broiler Supply Flock PPLO Status
- Ascites and Oedema in Turkey Poults
- Coccidiosis in Birds

Serology

The following chart outlines the serological tests conducted and includes the sera sent to the Alberta Public Health Laboratory for leptospirosis and equine encephalomyelitis testing:

	Bovine	Porcine	Equine	Buffalo	Canine	Poultry
Brucellosis Provincial	62	179	3	......	......	......
Brucellosis Federal	9,152	......	......	524	......	......
Vibriosis Mucus	563	......	......	......	......	......
Leptospirosis	117	110	......	......	2	......
Equine Encephalomyelitis	......	......	335	......	......	......
P.P.L.O.	......	......	......	......	......	14,379
Pullorum	......	......	......	......	......	46
Newcastle	......	......	......	......	......	46
Salmonella Typhimurium	......	......	......	......	......	16,260
TOTAL	9,894	289	338	524	2	30,731
GRAND TOTAL						41,778

The number of samples submitted for Brucella testing was practically the same as last year but they were mainly Federal bloods. The Federal government has completed their blood testing program with the result that the auction market bloods dropped to a mere 75 samples. The percentage of positive reactors to the Brucella tests was .53%.

The mucus agglutination test for vibriosis was conducted on 563 specimens and 136 were found positive. Cattle from 41 premises showed reactions.

Tests on poultry bloods have greatly increased for the following reasons:

(1) Survey of P.P.L.O. (Mycoplasma) status of broiler flocks and broiler hatchery supply flocks,

(2) Mycoplasma testing of turkey flocks for export purposes,

(3) Salmonella typhimurium testing of turkey flocks for export purposes.

Histopathology Section

This section is concerned primarily with the preparation and examination of sections from diseased tissues. The material, which is submitted by the Animal and Poultry disease departments of the Laboratory, as well as by practising veterinarians, is processed and examined microscopically for the purpose of interpreting and evaluating any pathological changes which may be evident. Many disease conditions produce characteristic changes in the tissues which may be recognized only by a microscopic examination, and frequently a diagnosis of a specific disease can be made only by this means. Certain virus diseases fall into this category, such as distemper in mink and dogs, infectious canine hepatitis, virus enteritis of mink and cats, and virus pneumonia in swine. The identification and classificaton of the many types of tumours whch are encountered also is the responsibility of this section.

In addition to the histopathological work, this section produces photographic slides and prints for use within the Branch, as well as preserving and mounting gross specimens for display and educational purposes.

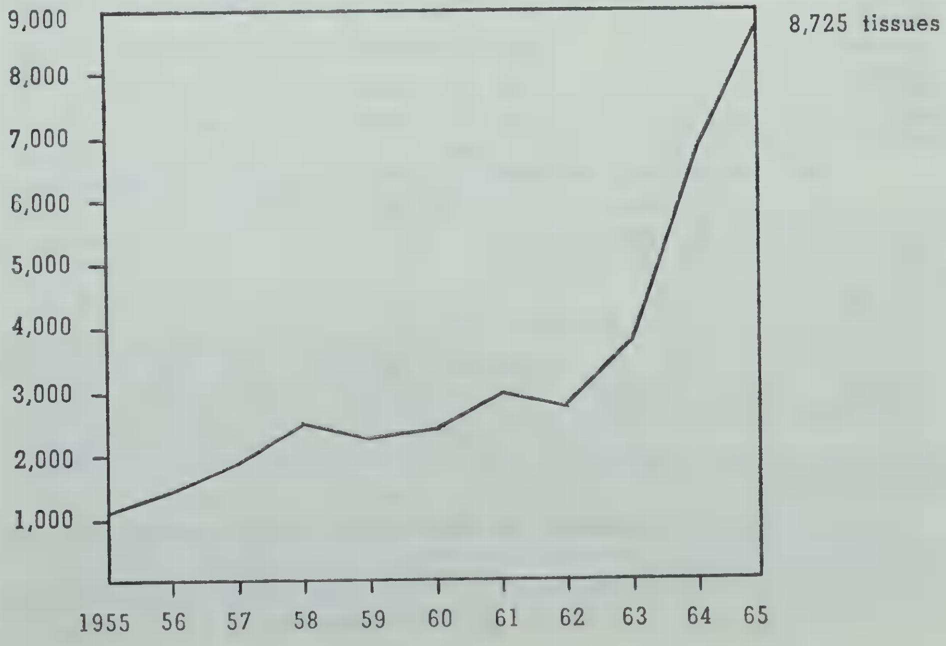
During the year, 8,725 tissues were processed, from which approximately 9,000 sections were prepared and examined under the microscope. This represents an increase of 38% in the number of examinations over those of the previous year.

Neoplastic conditions (Tumours), exclusive of the leukosis complex in poultry, accounted for 288 of these, of which approximately 60% were found to be malignant. The following chart is included to show the increase in work-load over the past ten years.

HISTOPATHOLOGY

Tissues Sectioned

1955-1965



Microbiology Section

(a) Bacteriology

Most of the animal and poultry accessions were routinely examined for pathogenic bacteria. The bacteriology section received 3,065 specimens from the animal pathologists, and 6,755 specimens from the poultry pathologists. The examinations carried out included bacteriological, serological, microscopic, chemical, animal inoculation, and other procedures. The following table illustrates the work performed:

Bacteriological Examinations	8,871
Fecal Examinations	188
Blood Counts	78
Skin Scrapings	65
Urinalysis	44
Cuboni Pregnancy Tests	20
TOTAL Specimens Received	9,820

Other Specimens examined included:

Milk Samples	7,333
Fluff Samples	118
Intestinal Contents	53
Miscellaneous	631

In addition, 27,129 poultry blood samples were examined serologically.

Media used (Whole Laboratory)

Plates	28,650
Liquid	94,129cc
Vaccine and Bacterin Production	14,489cc
Experimental Animals Inoculated (Whole Laboratory)	7,143
Guinea Pigs	250
Mice	1,640
Turkeys	2
Chickens	5,213
Pigs	32
Cattle	3
Pigeons	3

The chart below indicates the work done on reproductive diseases, revealing findings from fetus examinations and vibrio tampon tests:

Fetuses	Total	Vibrio	Brucella	Strep	Coryne	Others	Negative
Bovine	242	16	......	4	10	5	207
Porcine	15	......	......	......	......	......	15
Ovine	9	1	......	......	......	......	8
Equine	16	......	......	2	......	2*	12

*Equine Viral Rhinopneumonitis.

A total of 563 vibrio tampons were examined. There were 136 positive reactions, representing 41 premises. These results are in addition to vibriosis diagnosis made based on isolation of the organism from fetuses.

(b) Mastitis Testing

In this second year of mastitis testing, 7,333 milk samples were examined by the California Mastitis Test, by leukocyte counts and by culture. Other special techniques including coagulase tests on hemolytic Staphylococcus organisms and antibiotic sensitivity tests on significant pathogens were performed.

(c) Virology

An increasing number of specimens was handled by the virology laboratory during the year, reaching a total of 908 compared to 764 the previous year. The table indicates the examinations undertaken and the isolations made.

Disease Suspected	Examinations	Isolations
Infectious Laryngotracheitis	......	......
Infectious Bronchitis Virus	39	14
Transmissible Enteritis	20	2
Newcastle Disease	13	......
Mycoplasma Infections	754	202
Avian Encephalomyelitis	10	......
Psittacosis	4	......
Ornithosis	2	......
Embryo Lethal Agent	31	......
Pox	11	1
Experimental Pox	16	......
Poly Arthritis	5	......
Experimental Pigs	3	......

In addition, 29 experimental pigs were used in experiments involving virus pneumonia and atrophic rhinitis studies.

Parasitology

During 1965, parasitic examinations were carried out on 280 animal and 159 poultry submissions. These included faecal samples, skin scrapings and parasites recovered in the post-mortem rooms. Parasites continue to be of importance as producers of disease and as predisposing causes of other diseases.

There would appear to be an increase in number of cattle carrying burdens of Trichostrongyle worms. Strongyle worms continue to be of importance in horses. Swine are commonly found to be carrying very heavy burdens of Ascarid worms. Nematodes of the Capillaria genus and protozoan parasites of the Eimeria genus are the most pathogenic species found in poultry.

Toxicology

A total of 713 laboratory specimens were submitted for toxicological examinations. Of these 439 were animal and poultry specimens taken from cases of suspected poisoning. The remainder consisted of water and feed samples which were suspected of producing harmful effects in livestock. Strychnine and lead were the most frequently found poisons.

Correspondence and Communications

Full use of the services of the Veterinary Branch requires correspondence with veterinarians, livestock owners or their agents concerning diagnosis and recommendations. Such communications included: (1964 figures in brackets).

Letters	24,975 (27,618)	Radio & TV Interviews	20 (30)
Telegrams	95 (133)	Transparencies & Slides	151 (210)
News Releases	46 (24)	Photographic Prints	124 (175)
Film Releases	4 (6)	Scientific Papers*	4 (3)

*(1) Chalmers, G. A.—Equine Viral Rhinopneumonitis. Report of an Enzootic in Alberta—C.V.J. 6: 174 (1965).

(2) O'Donoghue, J. G.—Anthrax and Rabies—Can. J. Pub. H.

(3) O'Donoghue, J. G. & Ballantyne, E. E.—Observations on a Swine Herd Health Program—C.J.C.M. 29: 317 (1965).

(4) Vance, H. N.—A Survey of the Bovine Alimentary Tract for Clostridium perfringens—Master's Thesis presented to Colorado State University.

Several thousand bulletins on veterinary subjects were distributed, in addition to which there were a number of presentations by staff veterinarians to various professional and farm group meetings.

Report of the Agricultural and Vocational Colleges Branch

J. E. HAWKER, B.Sc., B.A., P.Ag., Director
J. E. BIRDSALL, M.Sc., P.Ag., Principal, Olds College
W. S. BARANYK, B.Sc., B.Ed., P.Ag., Principal, Vermilion College
M. H. JAQUE, B.Sc., M.Ed., P.Ag., Principal, Fairview College

Graduation, 1965

For the 1964-65 term, students were graduated from the Olds College on June 25th, from Vermilion on July 2nd, and from Fairview April 30th, 1965. On these dates Diplomas of Graduation or Certificates were presented as follows:

	Olds	Vermilion	Fairview	Total
Agriculture	48	47	12	107
Artificial Insemination	N/O[1]	10(10)[2]	N/O	10
Clothing and Design	8	N/O	N/O	8
Commercial	20(18)[2]	30(30)[2]	17(12)[2]	67
Home Economics	N/O	4	N/O	4
Horticulture	8	N/O	N/O	8
TOTAL	84	91	29	204

[1] Not Offered.

[2] Certificates Only.

The total of 204 graduates is 24 above the total of 180 graduated in 1964.

Staff Conference

On April 20th through 22nd, 1965, the Annual Staff Conference was held at the Vermilion College with 46 teaching and administrative staff members in attendance. Excellent presentations were given by Mr. Jas. Shaw, Department of Extension, University of Alberta, who spoke on "What's New in Audio-Visual Equipment" and by Dr. H. R. Ziel, Chairman, Division of Industrial and Vocational Education, Faculty of Education, University of Alberta, whose topic was "The Challenge of Vocational Education". Both presentations were followed by extensive discussion. Miss A. B. McFarlane, Supervisor of Home Economics, Department of Education, met with those instructing in girls' courses.

Very able presentations by staff members included: "Grades and Grading" by Mr. W. J. Collin, "How I Teach and Why" by Mr. L. G. Seath and Mr. W. F. Arthur, "Bursaries, Scholarships and Loans" by Mr. W. M. Burton, and a panel consisting of Mr. W. C. McLean, Mr. A. A. Qually, Mr. P. Farragher and Mr. D. Fleming, who discussed the topic "Extra-Curricular Activities".

Staff Changes

In 1965 there were nineteen instructional and administrative staff changes. Of these seven resigned to take other employment, one retired, one was granted leave for professional improvement, nine were new appointments and one was a transfer between colleges. Mr. J. A. R. Palin transferred from Vermilion to Fairview after successfully completing a year's post-graduate study at the University of Saskatchewan. Mr. A. E. Keller of Fairview successfully completed a year's post-graduate study at Saskatchewan but resigned to accept a teaching position in Saskatchewan.

Mr. R. G. McFadyen of the Olds Staff was granted leave for professional improvement in the fall of 1965.

New Courses

A new three week short course in Land Appraisal and Assessment was introduced at Olds in the spring of 1965. The course was open only to those already engaged in this field of work. Eighteen applicants were selected by the advisory committee.

Also at Olds, a newly formed advisory committee recommended general reorganization of the course in Clothing and Design.

At Vermilion a three month course in Animal Reproduction was offered starting in January, 1965. It was designed to introduce well trained personnel into the field. Ten applicants were selected by the advisory committee for the course.

Board of Agricultural Education

A regular meeting of the Board was held at 1:30 p.m. in Room 312 of the Legislative Building on Wednesday, February 24th, 1965.

In his opening remarks, Hon. H. E. Strom as Chairman stated that, because the position of the colleges was much firmer than in the immediate past, we could now plan the course that we wish to follow. He indicated that probably considerably more in the way of new construction at each college would materialize this year. He expressed encouragement by the stronger enrolment this year and paid particular tribute to the excellent recruiting job done at Fairview.

Possible amendments to the Agricultural Schools Act were discussed briefly. The Secretary reported that the Act had been placed in the hands of the Departmental Solicitor for review. It was agreed that the Secretary, with the advice of the Departmental Solicitor, should present any proposed amendments to the Act at the next meeting of the Board.

For the information of the Board, the Secretary reviewed the existing situation regarding maintenance at the colleges. Briefly, the maintenance staff at each college is responsible for day to day maintenance and minor renovations, is under the direction of a maintenance supervisor who is responsible to the principal, and is paid by the Department of Agriculture. Major maintenance jobs are referred to the Department of Public Works.

Motion: that present arrangements regarding maintenance at the colleges be retained. Mr. I. MacDonald, Dr. A. R. Robblee. Carried.

The Secretary reviewed the present situation with regard to the offering of high school academic subjects at the colleges. He pointed out that only required subjects at the Grade XI and Grade XII level were being offered when sufficient students requested such subjects. They are taught by accredited teachers and on a trimester basis with final examinations three times in the college year. Dr. T. C. Byrne pointed out that the setting of examinations at the Grade XII level other than at the end of June raised real problems. The only other school in the province operating on this basis is the Lindsay Thurber High School in Red Deer. At present Grade XII papers from the colleges are marked at Red Deer. If the volume increased substantially, some other arrangement would have to be made.

In reporting on a publicity program for the Olds College, Mr. J. E. Birdsall stated that, through the use of tape recorders, three five-minute programs a week were being produced and aired at Red Deer and Drumheller radio stations. These programs are designed, under the direction of a staff member, to keep the public informed of programs and activities at the college. The Secretary briefly reviewed similar work being done at both Vermilion and Fairview where some TV programs are also prepared.

Mr. M. H. Jaque referred briefly to an ad hoc advisory committee of farmers invited to the Fairview College last summer. The group toured the college under the direction of Mr. L. T. Jones, Instructor, and discussed the program. Mr. Jaque felt that similar groups invited to the college could be a source of worthwhile suggestions.

The Secretary described briefly new courses being developed in the general area of agri-business. These include the two year Horticultural Course at Olds from which the first eleven graduates will come in 1965; the course for Artificial Insemination Technicians being offered at Vermilion in the winter session from January 4th to March 26th, 1965; and the Appraisal and Assessment short course to be offered at the Olds College from April 26th to May 14th, 1965.

Mrs. H. Simonson expressed the opinion that there was a need for trained Herdsmen or Farm Managers. Dr. E. E. Ballantyne suggested that a meeting of the board might advantageously be devoted to a consideration of college objectives and policy particularly with respect to course offerings.

Mr. M. H. Jaque reported on arrangements with the Apprenticeship Training Board regarding apprenticeship courses at the Fairview College. The purpose of the courses is to upgrade tradesmen for certification. The Apprenticeship Board administers all final examinations but college staff and facilities are used.

Apprenticeship courses at Fairview are offered to meet a local need and to avoid the high cost of bringing trainees alternatively to Edmonton. There is no thought of implementing a similar program at either Olds or Vermilion.

The Secretary read a letter from Mr. J. P. Mitchell, Director of Vocational Education for the Department of Education, asking for a brief report on technical and vocational agricultural training in Alberta and advised that a report had been supplied.

There was a brief discussion regarding experimental work at the colleges. The Director pointed out that, because it would duplicate work at Canada Experimental Farms and the University, the role of the colleges was demonstration rather than experimentation.

Mrs. H. Simonson asked about the responsibility of the colleges toward girls from the farm in the area of home economics. Mrs. M. G. Roberts felt there was a need for girls trained in foods particularly in hospitals. Possibly through the medium of a symposium of interested people, the Director was asked to explore the possibility of offering courses in the home economics field beyond the present scope.

It was recommended by the Director that Board and Room charges to students be increased from $50.00 to $55.00 a month and that rates for instructional staff be increased from $55.00 to $60.00 a month effective September 1st, 1965.

Motion: that the recommendation to increase Board and Room Rates at the colleges be endorsed. Dr. A. R. Robblee. Mrs. E. Langdale. Carried.

The Secretary circulated a statement by Dr. W. H. Swift, Deputy Minister of Education, regarding the Provincial Technical and Vocational Training Advisory Board. He stated that, since from its title and terms of reference it would appear to be the over-all provincial board on vocational training, the Board of Agricultural Education could well be considered as a working arm of the larger body. Since at present the Secretary is the only appointed representative to the Provincial Board, he recommended that a second representative be appointed from the Board of Agricultural Education.

Motion: that Mr. Wm. Harper and Mr. J. R. McFall be responsible for arranging to have a second representative attend meetings of the Provincial Technical and Vocational Training Advisory Board. Mr. J. R. McFall. Dr. A. R. Robblee. Carried.

It was recommended by the Secretary that the Board meet more often than once a year as at present. The Board agreed that the next meeting should be held in the third week of October, 1965.

The Chairman expressed the appreciation of the Department to Board members for their time and interest in affairs affecting the colleges.

The 1965-66 Term

It was a very busy term at all three colleges. Facilities were improved and plans for expansion pretty well completed.

Enrolment in agriculture in the fall session was restricted and plans for increased staff and living facilities for the winter session at Olds were implemented. Student accommodation at Fairview and Vermilion both in residences and in teaching stations was also taxed to the limit.

At Olds and Vermilion, greater interest was shown in high school academic work and particularly for students wanting to continue agricultural training at university.

The revised program in Agriculture is gaining acceptance. At Vermilion nearly a fifth of the students returned for an extra session after securing a diploma in order to secure further training in a special area. Student enrolment in agriculture continued at a high level in spite of some restrictions.

Student Assistance Act Loans, Grants and Prizes

Assistance made available during the 1964-65 College Year was as follows:

	Olds	Vermilion	Fairview	Total
Loans	10,175.00(22)[1]	9,566.66(21)[1]	10,625.00(30)[1]	30,366.66(73)[1]
Loan Remissions	1,390.00(8)[1]	1,316.80(11)[1]	1,100.00(11)[1]	3,806.80(30)[1]
Prizes ($50 each)	800.00(16)[1]	500.00(10)[1]	300.00(6)[1]	1,600.00(32)[1]
TOTAL	12,365.00	11,383.46	12,025.00	35,773.46
Number of Students Assisted	35(13)[2]	28(13)[2]	33(6)[2]	96(32)[2]

[1] Number of Students.

[2] 1963-64.

Maintenance and Construction

Maintenance

Olds: The entire roof of the Mechanics Building was renovated and rebonded; the Machine Shop was re-roofed; new floor, pens, manure cleaner and other equipment were installed in Maternity and Bull Barn; foundations were placed under two livestock sheds; a new boiler was installed in heating plant and several major buildings were repainted.

Vermilion: The underground system for all electrical utilities was further developed; campus street lighting was extended; a fire siren and alarm system and programing system were installed; the renovation of the men's residence, administrative area, Kitchen and dining room was nearing completion at year's end; a major renovation providing two lecture rooms, four laboratories and staff offices was completed in the Mechanics Building.

Fairview: Three staff houses were repainted and renovated; the main offices were renovated and relocated and the rotunda enlarged; the hog barn floor was renewed and the layout renovated; lighting in classrooms and halls was increased; additional cooking and refrigeration units were installed in the kitchen.

Construction

No major construction project allowed in the 1965-66 fiscal year had gone to tender at the year's end. However, a great deal of basic planning was done at all three colleges and long-range campus plans are now virtually complete.

Olds: One pole-frame shed was constructed; one 50 foot section was added to the greenhouse; a storm sewer system was installed complete with a large dug-out to the east of the campus; campus roads were graded and gravelled preparatory to hard-surfacing; a chain link fence was constructed around the maintenance storage yard; the campus street lighting was extended.

Vermilion: The new Maintenance Shop was completed in 1965; the development of campus roads was continued; campus street lighting was extended.

Fairview: Three one-stall garages were constructed for three staff residences located overtown.

Enrolment for 1965 Term (see p. 212).

Programs Beyond the College Term

A limited quantity of extension work was carried out during the year at each college. Most of these programs were executed in co-operation with the Extension Branch.

Summer programs included three 4-H Club Weeks at Olds (two were transferred from Vermilion because the residence was closed for renovations) and one at Fairview with 4-H Eliminations again conducted at Olds. Farm Women's Week and W. I. Girls' Club Week were held at Olds and a 'Teen Age Camp at the Fairview College.

ENROLLMENT AT EACH COLLEGE FOR THE WINTER, SPRING AND FALL SESSIONS, 1965, WAS AS FOLLOWS:

	OLDS			VERMILION			FAIRVIEW			TOTAL		
	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall	Winter	Spring	Fall
Agriculture	144(150)[1]	38(33)	109(106)	111(121)	N/O	92(84)	55(35)	N/O	70(69)	310(306)	38(33)	271(259)
Animal Production (A.I.)	N/O[2]	N/O	N/O	10(N/O)	N/O	N/O	N/O	N/O	N/O	10(N/O)	N/O	N/O
Appraisal and Assessment	N/O	16(N/O)	N/O	N/O	N/O	N/O	N/O	N/O	N/O	N/O(N/O)	16(N/O)	N/O
Clothing & Design	11(9)	11(9)	23(13)	N/O	N/O	N/O	N/O	N/O	N/O	11(9)	11(9)	23(13)
Commercial	21(17)	20(17)	35(21)	30(27)	30(25)	36(30)	18(N/O)	15(N/O)	25(22)	69(44)	65(42)	96(73)
Home Economics	N/O	N/O	N/O	7(8)	7(8)	10(8)	N/O	N/O	N/O	7(8)	7(8)	10(8)
Horticulture	22(12)	N/O	25(26)	N/O	N/O	N/O	N/O	N/O	N/O	22(12)	N/O	25(26)
Motor Mechanics	N/O	N/O	N/O	N/O	N/O	N/O	6(10)	11(9)	9(9)	6(10)	11(9)	9(9)
Welding	N/O	N/O	N/O	N/O	N/O	N/O	6(11)	N/O(N/O)	9(10)	6(11)	N/O	9(10)
Total Vocational	198(188)	85(59)	192(166)	158(156)	37(33)	138(122)	85(56)	26(9)	113(110)	441(400)	148(101)	443(398)
High School Acad.	Nil[3]	Nil	8(0)	6(0)	16(12)	12(14)	31(36)	27(33)	28(31)	37(36)	43(45)	48(45)
TOTAL	198(188)	85(59)	200(166)	164(156)	53(45)	150(136)	116(92)	53(42)	141(141)	478(436)	191(146)	491(443)

1. 1964.
2. Not Offered.
3. Students with 50% or less academic program are listed as vocational students.

Other groups accommodated at the Colleges included: Farm Mechanization Days (3 days), Adult Welding Courses (two week —3 courses), Sheep School (3 days), F.U.A., Artificial Breeding Association, Seed Cleaning Association, Western Hog Growers' Association, Fish and Wild Life Conference, Hunter Training Schools, Accounting for Small Businesses (two evenings), Veterans' Land Administration (D.V.A.), W. I. Conference, Horticultural Judges School and a Farm and Home Management Short Course at the Olds College.

At Vermilion, while summer courses were suspended, facilities were used throughout the year by 4-H Clubs (23 meetings), 4-H Council (2 meetings), Crop Insurance presentation, Alberta Grazing Association, 4-H Leadership Courses (2), Bacon Hog Clinic, District 4-H Public Speaking Competition, Junior F.U.A., I.O.D.E. District Conference, F.U.A. District Board Meetings (3), Sheep Shearing School, F.U.A. District Convention, Alberta A.I. Association, Vermilion Chamber of Commerce visit, A.W.I. Conference and the Vermilion-Vegreville-Wainwright School Divisions Teachers' Convention.

Special events at the Fairview College included: Peace River Agricultural Institute of Agrologists Co-ordinating Conference, a day long visit from high school students at Fort St. John, Dawson Creek and Fairview, a student group visit from the University of Alberta, 4-H Annual Camp, Swine Production and Building School, Sheep Shearing School, Regional Seed Cleaning Plant Conference, Home and School Association Convention, and a meeting of government personnel examining crop loss payments in the Peace River area.

Appreciation

In 1965, the colleges received very considerable support from many commercial companies, farm and other organizations and a large number of individuals. The Department of Agriculture expresses its sincere appreciation to all of these people.

A number of the other departments of the Provincial Government, the University of Alberta and the Federal Government have been most helpful. Their assistance is gratefully acknowledged.

The very fine co-operation of college principals and their staffs has been very much appreciated.

OLDS AGRICULTURAL AND VOCATIONAL COLLEGE

The year 1965 was an eventful year in the life of the College. This was however more in the realm of planning than in actual events. Courses were, however, changed and added, staff increased and facilities improved. The official opening of the new Metals shop took place on Achievement Day, Friday, March 13th. This building, which actually went into use on January 4th, was a valuable addition to the facilities.

Planning during the year included completion of plans for an Animal Science building and a new 500 student residence, construction of both to commence before the end of the fiscal year; selection of plans for two new homes on the campus and the preparation of an overall campus plan of facilities for 500 students.

The college facilities were used almost continuously throughout the year with 6 weeks of summer courses, classes commencing on September 1st for students in Commercial, Clothing and Design and High School Academics, for Agriculture and Horticulture at the end of September, and the college year ending at the end of June.

A three week Appraisal and Assessment short course for people engaged in this work was given for the first time in April and May. Plans were under way for the introduction of an Irrigation Technician course starting in the fall of 1966 and a general reorganization of the course in Clothing and Design was also being carried out.

The college was honored on the Labor Day week-end by a visit from about 60 delegates who were attending a meeting of the Canadian Branch of the Commonwealth Parliamentary Association. Arrangements for their visit were made in co-operation with the Olds Chamber of Commerce and Mr. Robert Clark, M.L.A. for the Olds-Didsbury provincial constituency.

Enrolment and Instruction

Enrolment for the year was as follows:

	Sessional Enrolment, 1965		
	Winter	Spring	Fall
Agriculture			
First Session	39	4	56
Second Session	60	8	11
Third Session	25	18	27
Fourth Session	20	3	15
Post Graduate	2	......	......
Horticulture			
First Year	13	......	13
Second Year	10	......	12
Clothing and Design	11	11	23
Commercial	21	20	35
High School Academics	......	3	8
Appraisal and Assessment	......	18	......
TOTAL	201	85	200

Peak enrolment was in the Winter Session while the lowest was in the Spring Session when Horticultural students had left and enrolment in Agriculture was low. For the first time there was a freshman class in Agriculture in the Spring Session. The program of High School Academics began to gain momentum during the year.

It was necessary to limit enrolment in Agriculture in the Fall Session and so plans were made for increased staff to take care of divided classes in the Winter Session 1966, when enrolment will reach a new high and temporary residence facilities will be used to meet the situation until a new residence is built. Two additional instructors were hired as well as additional residence staff. Cafeteria equipment was being obtained and installed to better cope with the larger numbers.

Substantial increases in enrolment in Commercial and in Clothing and Design made it necessary to add one instructor in the former and a laboratory assistant in the latter increasing instructional personnel to two in each course.

The introduction of extended summer leave (8 weeks) for instructional staff was a welcome improvement in conditions of employment for them. The teaching load of instructors was also adjusted to cut down excessive loads and increase those that were light.

Special Lectures

During the Winter Session special lectures were given to students in Agriculture by Dr. C. F. Bentley, Dean, Faculty of Agriculture, University of Alberta; a panel from the Experimental Farm at Lacombe, headed by Mr. J. G. Stothart, Superintendent; Mr. J. B. Ludwig, Secretary and Mr. W. K. Snyder, Field Supervisor, County of Mountain View; Mr. M. W. Montgomery, Broder Canning Co., Lethbridge; and the following from the Alberta Department of Agriculture: Mr. A. M. Wilson, Field Crops Commissioner; Mr. W. H. T. Mead, Livestock Commissioner; Dr. G. R. Purnell, Director, Farm Economics Branch; Mr. D. H. McCallum, Dairy Commissioner; Mr. J. Edmunds, Apiary Supervisor; Mr. L. Welsh, District Agriculturist, Olds.

Mr. Leoppke of the National Employment Service; Mr. R. Young of the Personnel Department, Government of Alberta; Mrs. Nancy Zavediuk, Clothing Specialist, Alberta Department of Agriculture; and a representative of McCall's Fashion spoke to students in women's courses during the year.

Achievement Day

The annual Achievement Day was held on Saturday, March 13th, with about 600 people in attendance. This was a substantial decrease from recent previous years and can be accounted for largely by the fact that the livestock show was discontinued. This was very popular with the public but had limited teaching value. The dress review was staged twice and was well attended. Good displays were arranged in all departments.

Graduation and Alumni Reunion

For the first time, Graduation and the Summer Alumni were held as a combined event. Its success led to a decision to continue with the arrangement.

At graduation on June 25th, the Honorable Harry E. Strom, Minister of Agriculture delivered the address to the graduating class, and greetings were brought by Mr. J. E. Hawker, Director of Agricultural and Vocational Colleges, Mr. T. C. McBeath, President of the Alumni Association, and Mr. J. Angus McKinnon, a member of the first class which graduated in 1915. Class Valedictorian was Miss Marilynne Grimson of Red Deer, a member of the Commercial class.

Prizes for proficiency in various fields were awarded to eleven students. Diplomas and certificates were awarded as follows:

	*Diplomas	Certificates	Total
Agriculture	48	......	48
Commercial	2	18	20
Clothing and Design	8	......	8
**Horticulture	8	......	8
TOTAL	66	18	84

*Commercial students who excelled in all subjects received diplomas.

**Students in Horticulture participated in graduation but did not receive diplomas until experience requirements and summer assignments were completed.

At the Alumni Reunion classes of 50, 40, 25 and ten years ago were specially honored. This was the first time for a 50th anniversary reunion since the first class was graduated in 1915.

High School Academics

This program has started slowly but is beginning to build up. Only grade XII subjects were offered. Four students took Chemistry 30 and five took Mathematics 30 in the Winter and Spring Sessions writing regular departmental examinations in June. Three others received guidance in correspondence courses.

Five students took Mathematics 30, six took Chemistry 30 and five took Social Studies 30 in the Fall Session and wrote the same examinations as are written at the Lindsay Thurber Composite High School in Red Deer. The Winter Session commenced on December 6th with twelve students registered in Physics 30, seven in Mathematics 30, and six in English 30.

Post Graduate Specialization

This phase of the Agricultural course has not drawn large numbers but a few continue to register and are enthusiastic about it. In the Winter Session two students were registered for post graduate work in Agricultural Mechanics.

Appraisal and Assessment Course

A three week Appraisal and Assessment course was initiated in April and May. The course was planned by a committee of professional men in these fields employed by government and the University of Alberta and engaged in private enterprise. It was approved by the Minister of Agriculture who also named a permanent advisory committee from the same sources.

The course was given by staff of the Agricultural and Vocational Colleges assisted by University and government personnel. The college staff were prepared for the course through a two day session in Edmonton with specialists in different fields.

Students in the course were all people who were engaged in Appraisal and Assessment work and many of them had taken a course given on an evening basis at the University of Alberta. This gave them a good background for the practical course given.

Certificates of attendance were presented to all eighteen students at a closing dinner.

Advisory Committees

During the year Advisory Committees continued to function for the courses in Horticulture and in Assessment and Appraisal. Committees were established for the first time for the course in Clothing and Design and for a proposed course for Irrigation Technicians. Because of the complexity of agricultural production processing and merchandising, advisory committees have not been established but the matter was considered during the year. These committees have proven their worth and will no doubt be continued and extended.

Extension Activities and Adult Courses

During the year members of the staff participated in a limited amount of extension work mostly in co-operation with Extension personnel in the surrounding area. A major phase of this was participation in the extension program organized by the office in Olds for much of which college facilities were used. The largest function held at the college was Farm Mechanization Days, a three-day program of lectures and equipment displays with over 1200 people from most parts of Alberta outside the Peace River country in attendance.

At the end of the year plans were under way for a similar program under the title "Progressive Farming Days" to be held in February 1966.

During the year 30 adults attended welding courses at the college. Eighteen took two-week courses in January and February while 12 took a three-week course in November.

A three day sheep school arranged by the Livestock Branch was attended by thirty farmers besides students majoring in Animal Science.

The facilities of the college were used by local extension workers for various group and committee meetings as well as by various agricultural groups such as the F.U.A., the Artificial Breeding Association, the Seed Cleaning Association and the Western Hog Growers Association.

Non-agricultural groups using the facilities included the Fish and Wild Life Branch, for a series of Hunter Training schools, from which 150 people graduate, and the Olds Chamber of Commerce in co-operation with the Extension Department, University of Alberta for two evening courses in "Accounting for Small Businesses" which about 60 people attended.

4-H Events

The college continued a close association with the 4-H organization. About 40% of the students had a 4-H background; a 4-H Campus Club operated throughout the year; three provincial 4-H Club Weeks and the provincial eliminations were held at the college. One student attended National 4-H Club Week; two students assisted with judging at the Provincial Junior Seed Fair in Calgary and numerous district 4-H functions were held at the college.

Other Events

The following is a list of other events held at the college during the year:

Month	Event	Attendance
April	—Olds East W.I. Constituency Tea and Handicraft Display	75
May	—Veteran's Land Administration, D.V.A.	28
June	—F.U.A. District Convention	100
June	—Women's Institute Constituency Conference	100
July	—Farm Women's Week	100
July	—First 4-H Club Week	162
July	—Second 4-H Club Week	180
July	—Third 4-H Club Week	182
August	—4-H Eliminations	194
August	—Horticultural Judging School	46
August	—Women's Institute Girls Club Week	160
September	—Farm and Home Management Short Course	52
November	—Fall Alumni Reunion and Dance	200

In addition to the events listed and those mentioned in other parts of the report there were a number of picnics and miscellaneous gatherings. In total approximately 6,000 people used the college facilities. This is in addition to regularly scheduled courses and many visits from individuals.

Publicity

To supplement head office publicity, a weekly release was sent to all weekly and daily papers in Central and Southern Alberta as well as to radio and television stations in the area. The radio program "College Calendar", started in 1964 was continued on radio station C.J.D.V. at Drumheller. Mr. John Nielson of the college staff was moderator of the program. The same program was carried on station C.K.R.D., Red Deer until the end of June.

Staff members spoke at a number of Career Events in high schools and to several Home and School Associations during the year.

Student Placement

With some students from each course and all from some seeking employment, a college placement service has been established. It was continued and expanded during the year.

Grounds and Plots

The grounds were handled on a mainly maintenance basis. No re-landscaping was carried out. This was due to the fact that a long term campus plan was being developed by a consulting architect appointed by the Department of Public Works.

In the plot area, vegetable production for the college dining room and the production of plant material for teaching purposes were continued.

The college continues to produce Breeders' Seed of Olds Creeping Red Fescue.

Experimental and demonstration plots of cereals, forage crops, oil seed crops, lawn and forage mixtures were grown. Vegetable trials as well as plots of Sorghum and Sorghum-Sudan grass crosses were carried out in co-operation with the Horticultural Station at Brooks.

Trials of Rye varieties were carried for the Lacombe Experimental Farm.

Maintenance and Construction Program

One new pole frame shed was constructed; a 50 foot extension to the greenhouses was built; a storm sewer system with a large dugout to catch run-off was put in; campus roads were prepared for black-top; a chain-link maintenance yard was built; street lights were installed in the farmstead area and a maintenance storage shed was built.

A full maintenance program was carried out. Major projects included the building up and bonding of the entire roof of the Mechanics building; re-roofing of the machine shop; installation of new floor, pens, manure cleaner and other equipment in the maternity and bull barn; raising of two livestock sheds and pouring of foundations; installation of a new boiler in the Maintenance Shop and the painting or repainting of several major buildings.

The College Farm

Above average rainfall throughout the cropping season delayed seeding and all following operations. Grain was lost through lodging and shattering, with some areas flooded or too soft to combine. However, average yields were obtained. The first cutting of hay was above average yield but below in quality due to intermittent rains. Very little second cut was put up in good condition.

Summary of Crops Harvested:

Crop	Acreage	Yield
Wheat	18	765 bus.
Oats	95	6,165 bus.
Barley	80	2,430 bus.
Hay	165	165 tons
Silage	25	120 tons
Pasture	150	

Livestock

During the season excellent grazing was available to the cattle and sheep which took them into the winter in good condition.

A Hereford sire was purchased for use in the Shorthorn herd to produce cross-bred animals for teaching purposes.

The Suffolk and Dorset Horn flocks lambed well and all of the ewe lambs will be retained to increase the breeding flock.

Two Yorkshire boars were procured as sires for the swine herd. The high scoring attained by the sows in R.O.P. has created a demand for the college breeding stock.

Performance testing programs were continued with all breeds of stock on the farm.

Inventory of Livestock as of December 31, 1965

Holsteins	38
Shorthorns	51
Yorkshire Swine	148
Sheep	57
Poultry	250

Farm Sales for Year Ending December 31, 1965

Livestock	$29,258.52
Dairy Products	5,763.30
Poultry and Eggs	1,232.54
Vegetables	600.00
TOTAL	$36,854.36

Equipment and Replacements

A new mower, hay conditioner and a one-ton truck were purchased during the year. Old wooden granaries are being replaced by new metal bins at the rate of one per year.

The major portion of the program for construction of fences and corrals has been completed.

Instructional Staff

Miss Thelma Graham retired from the position of Dietitian and Dean of Women on June 30th; Mrs. A. Thomas resigned as College Nurse to return to Vancouver Island; Mr. Jas. Dennington, Instructor in Horticulture and Grounds Supervisor, left to accept employment in industry and Miss Marlene Nixon, Instructress in Clothing and Design left to be married.

Mr. R. G. McFadyen went on educational leave early in September.

The vacant positions were filled and six additional employees were hired to fill new positions as instructors and in supervisory positions in the residences. The use of laboratory assistants was extended as one means of reducing the teaching load of instructors.

The introduction of extended summer leave (8 weeks) for instructional staff was carried out with few problems. This along with a definite maximum teaching load has made employment more attractive. Instructional and Administrative staff at the end of the year was as follows:

J. E. Birdsall, M.Sc., P.Ag., Principal, Community Organization
Mrs. A. Armstrong, Dietitian
W. F. Arthur, B.Sc., Academics
R. H. Bradley, B.Sc., Plant Science, Vocational Academics
E. O. Bryant, Maintenance Supervisor
W. M. Burton, B.S.A., P.Ag., Farm Mechanics
D. Chiliak, Assistant Dean of Men
Mrs. E. Collin, B.Sc. (H.Ec.) Clothing and Design
H. Giesbrecht, Accountant
B. J. Godwin, B.Sc., B.Ed., P.Ag., Horticulture
Mrs. B. Gough, Commercial
Miss E. A. Harding, Stenographer
L. V. Harris, Academics
G. J. Hazlett, B.Sc., Farm Mechanics and Farm Management

G. B. Harrison, B.S.A., P.Ag., Farm Structures, Community Organization
Miss F. E. Jeffrey, R.N., Dean of Women, College Nurse, Home Nursing
R. N. Kroon, Horticulture
R. G. McFadyen, B.E., Farm Mechanics (on educational leave)
Mrs. D. Moritz, Librarian
Miss G. Nicholls, Assistant Dean of Women
J. R. Nielson, B.Sc., Animal Science
G. A. Ogston, Farm Manager, Animal Science
A. A. Qually, Recreation Supervisor
L. B. Seeger, Metal Work
Mrs. D. Sutherland, Commercial
H. W. Sutherland, B.Sc., Farm Management
M. J. Tsujita, M.Sc., Plant Science
R. P. Warrington, F.R.G.S., Dean of Men, Public Speaking
G. S. White, Administrative Officer
S. B. Wilton, B.Sc., P.Ag., Animal Science

VERMILION AGRICULTURAL AND VOCATIONAL COLLEGE

General

Operations for the year 1965 were strongly affected by major renovations in the Student residence. To some extent classroom routine was upset by renovations in the Agricultural Mechanics Building. All major reconstruction was carried out by the Department of Public Works. With all available accommodation occupied by students it was only because of splendid co-operation between the Department of Public Works personnel, students and College staff that major projects were undertaken and completed to mutual satisfaction. Maintenance and Construction Supervisor Mr. J. R. Smith as well as Construction Foremen, Messrs. F. Goa and I. Turcotte were particularly involved and helpful in organizing the work here so as to facilitate an almost normal operation throughout the Winter, Spring and Fall Sessions. Renovation of the Kitchen area necessitated the closing down of all College operations during July and August and a two week delay in the opening of the Fall Session.

Instruction and Placement

The new program in Agriculture was continued with a minimum of adjustment. The manner in which it has been received is most gratifying particularly when about 20 percent of the students return for an additional session or more to complete requirements for another major or to pick up additional subjects in which they have a particular interest. This is an indication of the need to explore the possibility of increasing the number and variety of subjects offered. Even though entrance requirements have not been changed, a number of high caliber students are being attracted. The introduction of High School academics has also contributed to students staying to complete High School Diploma or Senior Matriculation requirements. The latter were particularly emphasized in the Spring Session when Agriculture was not offered. Messrs. J. F. Harcus and R. M. Gratz of the Animal Science Department offered Grade XII subjects along with Mr. H. J. Earle and Miss E. M. Taylor, Vocational and High School Academic Instructors.

The course in Animal Reproduction was introduced commencing January 5, 1965. This was a one session program offered to candidates with a strong agricultural background equivalent to a Diploma in Agriculture from an Alberta Agricultural and Vocational College. The program was developed under the auspices of the Alberta A. I. Association and is designed to introduce well-trained personnel into the field. The first such course proved successful, only minor revisions are planned for succeeding years. This course to be offered once a year only.

The program in Home Economics was continued with no modifications, the caliber of students attracted was most gratifying. With improved facilities and a greater degree of versatility the program will attract greater numbers of students.

The Commercial program continued to be popular. It was necessary to increase instructional staff in the area to meet the growing demands. Certain commercial subjects were made available to students in Agriculture and Home Economics. There is a potential in this situation and as facilities are improved this potential will be further developed.

An interesting development is the increasing interest of industry serving agriculture to employ graduates from the agricultural course. Following each of the sessions in the last year, there were more offers of employment than there were graduates interested. The same situation existed relative to graduates in Home Economics and Commercial. Remuneration offered in most cases was most adequate. A majority of the graduates in Agriculture returned to operate or help in the operation of the home farm.

Enrolment

Enrolment for the year was as follows:

Sessions, 1965	Winter		Spring		Fall	
	M.	F.	M.	F.	M.	F.
Agriculture						
1st Session	18	......	......	......	60	......
2 - 4 Sessions	85	1	......	......	31	1
A.I. Technician	10	......	......	......	......	......
Home Economics	......	7	......	7	......	10
Commercial	......	30	......	30	1	35
Academic and Agriculture or Home Economics	7	......	......	......	6	2
Academic Only	4	2	11	5	2	2
TOTAL	124	40	11	42	100	50
Total Students	164		53		150	

All figures above are for full session courses. In addition to the regular courses, four one-week courses for Fire Officers were conducted by the Provincial Fire Commissioners Office during the Spring Session, with an average attendance of 30 students in each. This program will be expanded in the near future and become a regular feature.

Graduation 1965

The combined Graduation Exercises and Alumni Reunion originating in the celebration of the 50th anniversary of the Colleges has proved a very popular idea. Such proceedings were again held at the College on July 2nd, 1965. Dr. E. E.

Ballantyne, Deputy Minister of Agriculture, and Mr. J. E. Hawker, Director, Alberta Agricultural and Vocational Colleges, Mr. R. Snelgrove, President of the Alumni Association and Rev. C. H. Miller of Vermilion participated in the Graduation Ceremonies. Mr. L. Blades of Ohaton, former student and member of the staff of the Vermilion Agricultural and Vocational College was the guest speaker.

Diplomas of Graduation and Certificates were presented as follows:

Agriculture	47 Diplomas
A.I. Technicians	10 Certificates
Home Economics	4 Diplomas
Commercial	30 Certificates
TOTAL	91

Winners of Major Scholarships and Awards

North-Western Utilities prize for General Proficiency in Home Economics—Dorothy Lear of Hardisty.

Hazel Hurt Trophy for General Proficiency in Commercial—Irene Szabados of Edgerton.

T. Eaton Company of Canada Ltd. Prize for General Proficiency in Agriculture—Gordon Gray of Edmonton.

The Staff Medal was awarded to Lyonel Schobert of Doe River, British Columbia for Outstanding Leadership in the Student Body and High Academic Achievement.

Donors of Prizes to Members of the Graduating Class were:

Stephens Limited, Vermilion.
Tom Boy Stores, Vermilion.
McMillan-Brimacombe Agencies, Vermilion.
Long's Drugs, Vermilion.
Canadian Utilities, Vermilion.
Vic's Pharmacy, Vermilion.
Vermilion District Co-operative Association, Vermilion.
Canada Packers, Edmonton.
Alberta Livestock Co-operative, Edmonton.
Canadian Imperial Bank of Commerce, Vermilion Branch.
Vermilion District Graduate Nurses' Association.
Spinning Wheel, Vermilion.
Taylor, Pearson and Carson Limited, Edmonton.
Northern Alberta Dairy Pool, Vermilion.

Scholarships to Undergraduates

In addition to the Graduation Exercises two additional functions were held to present Scholarships and Bursaries to Undergraduate Students. These functions come toward the end of each session when presentations are made for achievement in the preceeding session. This provides an opportunity for Donor Representatives to meet the successful students and to familiarize themselves with the functions of the College.

Our Color Night was held on March 20, 1965 and the Christmas Banquet on December 18, 1965. Students, Staff and Donor Representatives gathered to honor students who had achieved academically and in extra-curricular work.

Scholarships were awarded as follows for achievement in the Fall Session, 1965:

Line Elevator's Farm Service for Highest Standing in the Plant Science Major—James Elliott, Minburn; Lloyd Davison, Innisfree; Dennis Lemp, Dewberry.

The Jack Tucker Scholarship for Highest Standing in the Animal Science Major—Randall Kasa, Edberg.

The Craigs Limited of Vermilion Scholarship for Highest Standing in the Animal Science Major—Keith Boulter, Rosalind.

The British American Oil Company Scholarship for Highest Standing in the Farm Management Major—Gerald Martin, Therien; Richard Eastland, Edmonton.

The Imperial Oil Scholarship for Highest Standing in the Agricultural Mechanics Major—Maurice Chauvet, Legal; Donald Wentz, Grassy Lake.

The Robert Gardiner Memorial Scholarship (F.U.A. Co-operative Ltd.) for Highest Standing in the General Program—Gary Schwindt, Spruce Grove; Brian Taylor, Gibbons.

The V.A.V.C. Alumni Association has arranged to provide one scholarship per session for General Proficiency in Academic and extra-curricular work. There is also a number of bursaries provided by the following donors to assist and to encourage young people to extend their education:

United Grain Growers Limited
The Winnipeg Grain Exchange
The Farm Women's Union of Alberta
The Alberta Wheat Pool
The Alberta Women's Institutes
The Royal Canadian Legion
The Wheat Board Surplus Monies Trust.

The continued interest and support of the numerous donors is very much appreciated.

Parents' Week-end and Open House

Under the existing program of intensive training, a major event such as the Little Royal and Achievement Day was no longer feasible since it would call on a major effort in one session only.

The Residence and Mechanics Buildings were in the process of renovation during the Winter Session. However, an Open House was held on Saturday, February 26, 1965, when the public was given the opportunity to see for themselves the much publicized work that was going on at the College. The function was well attended by parents and people from the area. A student group presented an operetta "The Singing Freshman" during the evening to a capacity audience.

In the Fall Session another successful Parents' Week-end was held on December 4, 1965. Most parents were in attendance and showed a keen interest in the College. Students provided a high caliber of entertainment in an evening program to bring the days proceedings to a close.

Non-College Events in 1965

The facilities at the College continue to be in demand for meetings and short courses of an Agricultural or Educational nature:

23 4-H Club Meetings
2 4-H Council Meetings
1 Crop Insurance Plan Meeting
1 Alberta Grazing Association Meeting
2 4-H Leadership Courses
2 Bacon Hog Clinics
1 District 4-H Public Speaking Competition
1 U.C. Men's Retreat
1 Jr. F.U.A. Debate
1 I.O.D.E. District Conference
3 F.U.A. District Board Meetings
1 Sheep Shearing School
1 F.U.A. District Convention
1 Alberta A.I. Association Meeting
1 Vermilion Chamber of Commerce Meeting
1 A.W.I. Conference
1 Vermilion, Vegreville, Wainwright Teachers' Convention.

A number of activities were not held because of renovations. The staff has assisted in a number of the above functions and a very rewarding relationship exists between the College and local Extension Workers.

V.A.V.C. on TV—Radio and Press

As in the past Messrs. K. Stone, E. Horton, and D. Bell continue work on publicity in the media mentioned. The local press and radio have been very co-operative. The College Staff participated in TV programs originating from Lloydminster. These are mainly of an Extension nature and keep the name of the College before the public. Occasional news releases were prepared for C.F.C.W. "Call of the Land" and local newspapers in the area. The five minute radio program "Halls of V.A.V.C." was discontinued for the summer due to the introduction of extended summer leave for Teaching Staff.

The College Farm, 1965

The 1965 season was exceptionally cold, late and wet in the spring, reversing its pattern to a prolonged dry hot spell in late summer. This was followed by a wet fall which was damaging to crops showing lush growth, waiting to be swathed. Hay crops were heavy and final yields of grain were above expected quality and quantity. Rust damage was severe in non-resistant crops.

Cropping Program, 1965:	Acres	Yield
Wheat	5.5	200 bus.
Oats	67	4,920 bus.
Barley	37	1,940 bus.
Hay	110	216 tons
Silage	32	143 tons
Fallow	72	
Pasture	75	

Vegetables	Yield - lbs.
Potatoes	12,100
Turnips	2,360
Carrots	6,000
Beets	1,500
Cabbage	550
Parsnips	1,600

Livestock Inventory, December 31, 1965	Number
Dairy Cattle	45
Feeder Steers	24
Beef Heifers	10
Sheep	59
Swine	67
Poultry	432

The principal replacements and improvements to the College Farm included a tractor, hay conditioner, rod weeder, automatic poultry feeder, hog barn cleaner, tractor heat-houses, electric sheep clippers, a holding and sorting cattle corral complete with chute, squeeze and other equipment. The dairy cattle feeding platform was extended.

Farm Sales—January 1, 1965 to December 31, 1965	
Vegetables	$ 740.28
Milk	3,336.64
Cream	2,701.44
Eggs	1,725.17
Poultry	144.56
Livestock for Slaughter	10,227.27
Livestock for Breeding	684.00
Wool, Hides, Misc.	1,156.22
TOTAL Farm Sales	$20,715.58

Maintenance

Most major renovation and maintenance jobs were undertaken by the Department of Public Works. The underground system of utilities was further developed and additional lighting standards installed. A new fire siren and alarm system was installed together with a new programing system. Excepting the Girls' Wing in the Residence, new plumbing was installed throughout the remainder of the residence. Additional circuits were added and all wiring was renovated and placed in conduits. Lighting was improved in classrooms and in the residence. Large areas of the Residence were replastered and completely refinished. Dropped ceilings were installed in hallways and public areas. A modern Student Lounge was provided. The dining area was completely modernized and the food preparation area was prepared for new equipment. The program has greatly improved the residence in appearance and utility.

A major renovation program was completed in the Mechanics Building providing two modern lecture rooms, one drafting room, three laboratories and staff offices. Much needed storage space was also provided. The transformation improved the inside appearance and has increased the utility of the space available.

A new Maintenance Shop was also completed in the spring of 1965. This provides space for storing maintenance vehicles, repair work on equipment, a paint shop, an electrician's and plumber's shop and cold storage. The added facilities provide the Maintenance Department with a centralized working and storage area for the whole campus.

In all buildings additional fire fighting equipment and safety features were installed to provide greater measure of safety to all who use the premises.

Development of campus roads was continued on a limited scale pending renovation of water and sewage mains. Major work in this area is also dependent on the structural development on campus. The plots and gardens provided adequate materials for classroom purposes and for kitchen use. All work was done according to a long range plan and the full benefits should begin to show within the next two years.

Teaching and Administrative Staff

Nominal changes in staff occurred during the year. Mr. W. K. Russell, Farm Manager, retired due to ill health and was succeeded by Mr. R. D. Heller, who was employed at the University of Alberta Farm. Toward the end of the year a faithful servant Mr. W. B. Olson, Maintenance and Construction Supervisor, suddenly passed away. Mr. Jake Hamm resigned to return to full time farming and to continue studies at the University of Saskatchewan. Even though the extended Summer Leave was made available, a number of the staff spent a considerable amount of time in Extension Work. Messrs. R. M. Gratz and J. F. Harcus spent one month in Ontario familiarizing themselves with A.I. techniques. Mr. J. A. R. Palin, after 13 years at Vermilion, transferred to Fairview Agricultural and Vocational College.

The Staff for the 1965 Academic Year

W. S. Baranyk, B.Sc., B.Ed., Principal
D. W. Bell, Agricultural Mechanics
G. A. Boggs, Agricultural Mechanics
O. W. Clouston, Accountant
J. Corbiere, Sessional Instructor in A.I.
Mrs. H. Cross, R.N., School Nurse
Miss E. Daugela, Commercial
G. Daugela, B.Sc., B.Ed., P.Ag., Agricultural Mechanics
H. J. Earle, B.Ed., Academics
R. M. Gratz, B.Sc., P.Ag., Animal Science
Miss M. Hancock, Secretary
F. J. Harcus, B.Sc., P.Ag., Animal Science
R. D. Heller, Farm Manager
E. H. Horton, B.Sc., P.Ag., Animal Science
Mrs. H. Hurt, Commercial
Mrs. L. Johnson, Home Economics
A. Klar, B.Sc., P.Ag., Plant Science
W. McLean, Foods Service and Dean of Men
J. F. R. Moore, B.Sc., Agricultural Mechanics
Mrs. W. L. Robinson, Dean of Women
L. G. Seath, B.Sc., P.Ag., Farm Management

C. Rouget, D.V.M., Sessional Instructor in Anatomy and Physiology
K. M. Stone, B.Sc., P.Ag., Plant Science
Miss B. Strome, Staff Secretary
Miss M. Taylor, B.Ed., Academics
W. R. Williamson, Recreation and Assistant Dean
Miss C. Young, B. Home Ec., Home Economics.

FAIRVIEW AGRICULTURAL AND VOCATIONAL COLLEGE

The Agricultural Course was offered during the fall and winter sessions of the 1964-65 term.

First year Welding and Motor Mechanics Courses were offered to apprentices through the co-operation of the Department of Labour. In addition, Special Courses were offered to apprentices in both Welding and Motor Mechanics. Early in 1965 two, 2-week Welding short courses were provided for young farmers who wished to learn to weld or improve their welding technique.

All of the Commercial class who graduated in the spring of 1965 obtained employment.

The 1965 fall class in the Commercial course commenced on September 1st. The typing classroom was enlarged to accommodate the increased enrolment. In addition, 25 typing chairs were purchased, as well as several new typewriters.

The 1965 fall term for Agriculture was postponed until October 18, so that students could finish their harvesting operations.

A new Feedlot, complete with shelter and an automated system for rolling grain and moving it to a central feed bunk, was constructed by the Department of Public Works. The objective was to benefit students by the inclusion of feedlot management in the Agricultural Course.

The Hog barn was remodelled by the College Maintenance Staff. A new feeding system and manure disposal system was installed in order to better demonstrate labour saving methods to students.

Special Lecturers and Visitors

The College had many visitors during the year. Most of the following were guest lecturers in various classes of the Agricultural Course.

Mr. E. F. Iddins—Director F.U.A. District 2, Brownvale.
Mr. John Hammond—Solicitor, Fairview.
Mr. Leon Martin—Manager, Royal Bank of Canada, Fairview.
Messrs. Ralph Craven, Norman Soder—Farm Credit Corporation of Grande Prairie and Fairview.
Dr. G. Purnell—Director, Farm Economics, Edmonton.
Mr. S. G. Preston—Supervising Agriculturist—Prince George, B.C.
Dr. A. A. Guitard—Director, Canada Research Station, Beaverlodge.
Messrs. R. Dixon, G. McAllister—Dairy Branch, Edmonton.
Mr. J. W. Edmunds—Supervisor of Apiculture, Edmonton.
Mr. Wm. Connor—Federated Co-ops, Fairview.
Mr. J. Philpott—President, Alberta Beekeepers Association, Brooks.
Mr. P. F. Pawlowski—Manager, Alberta Honey Producers Co-op Ltd., Edmonton.

Graduation

On April 30th, 1965, graduation exercises were held in the College Gymnasium. Dr. Wm. T. Andrew, head of the Horticultural division of the Plant Science department, University of Alberta, was guest speaker. Reverend C. S. Fraser gave the Invocation. Leslie Semple of Dawson Creek, B.C., was Valedictorian. Mr. J. E. Hawker, Director, Alberta Agricultural and Vocational Colleges, presented diplomas to twenty-nine students as follows:

Agriculture—12
Commercial—17 (12)*

*Certificates only.

At the banquet preceding the presentation of diplomas, representatives of several firms and other organizations presented scholarships to winning students. Names of donors and students are listed in the next section, as well as scholarships and prizes presented on other occasions during the year.

Scholarships and Prizes for Both Sessions

Student Assistance Act Prizes ($50.00) each to: Ken Wasmuth, Grande Prairie (First Session); George Dimsdale, McLennan (First Session); Paulette Hyrchan, Spirit River (First Session); Ida Lanctot, Girouxville (Second Session); Gerald Vipond, Rolla, B.C. (Second Session); Ken Wasmuth, Grande Prairie (Second Session).
Wheat Board Surplus Monies Trust ($100.00) each to: Ken Wasmuth, Grande Prairie; Wayne Davies, Dimsdale.
Peace River Livestock Co-op ($50.00) to: Wayne Moodie, Sexsmith.
British American Oil Co. Ltd. ($50.00) each to: Werner Sellin, Northmark; Henry Dechant, Friedenstal.
Imperial Oil Ltd. ($50.00) each to: Harold Bratland, Hythe; Ralph Isaac, Crooked Creek.
Line Elevators Farm Service ($50.00) each to: Harvey Edmunds, Hines Creek; Werner Sellin, Northmark.
F.W.U.A. (Dr. Irene Parlby Memorial) ($50.00) to: Irma Furstenwerth, Gage.
U.F.A. Co-op Ltd. (Robert Gardiner Memorial) ($50.00) to: Harvey Edmunds, Hines Creek.
United Grain Growers ($50.00) each to: Harvey Isaac, Crooked Creek; Stirling Hanson, Valhalla Centre; Wayne Moodie, Sexsmith; Allen Buldofner, Northmark.
W. P. Loggie—Fairview ($100.00) to: Ken Wasmuth, Grande Prairie.
Alberta Pacific Grain Co. Ltd. ($50.00) to: Henry Moormann, High Level.

Bursary Donors and Recipients

The following bursaries were presented by donors at the Christmas Closing Banquet held on December 17th, 1965.

Alberta Wheat Pool (Henry Wise Wood Memorial) ($135.00) each to: Wanda Eastman, Brownvale; Robert Fiesen, Crooked Creek.
Wheat Board Surplus Monies Trust ($100.00) each to: Gordon Fraser, Clyde; Lena Kitzmann, Hines Creek.
Canadian Legion (Alta. Command) ($100.00) to: Robert Finch, Grande Prairie.
Winnipeg Grain Exchange ($100.00) each to: John Lieverse, Beaverlodge; Allan Parlee, Woking.
Kiss Farms Ltd. ($100.00) to: Malcom McLeod, Rycroft.
Albright Memorial ($50.00) each to: Jeannette Boisvert, Girouxville; Karen Pool, Beaverlodge; Dale Sather, Wanham.
F.U.A. District #1 ($250.00) to: Allen Perkins, Debolt.
Fairview Chamber of Commerce ($100.00) to: Evelyn Patton, Eureka River.

Extension and Publicity

The College enjoyed excellent co-operation from news media during the year. Many persons commented favourably on the publicity the College received.

The Fairview Post, Grande Prairie Herald-Tribune, Peace River Record Gazette, and Edmonton Journal each printed an occasional article or news item. Many of these were supplemented by pictures taken by Fairview Photographer Ziggie.

C.B.X.T. taped an on-the-spot seventeen minute TV program which was broadcast over Edmonton, Grande Prairie, and Peace River stations. Principal M. H. Jaque was interviewed on a fifteen minute program on C.F.R.N.-TV—Edmonton. Several staff members also participated in a number of live broadcasts from C.J.D.C.-TV in Dawson Creek, B.C.

A program on C.K.Y.L. Peace River was instituted early in the summer of 1965. The general format for most programs was interviews with staff and students about College courses and student activities. Broadcast time was noon each Monday. The other three Peace River radio stations also broadcast several taped interviews.

The Principal and several staff members visited various Peace River High Schools on career days and on other occasions. Several speaking engagements were accepted at meetings sponsored by other Peace River area organizations.

Several staff members judged at Summer and Fall fairs in the Alberta portion of the Peace River district, as well as the B.C. Block. A College display board was taken to the larger fairs. This enabled staff members to talk to parents and prospective students.

College facilities were made available for the use of several organizations during the year. The University of Alberta, Extension Department, District Agriculturists, and men and women farm groups were a few of the organizations using College facilities for meetings and workshops.

Special Events

The Peace River Branch of the Agricultural Institute of Agrologists, consisting of members from the B.C. Block and the Alberta section of the Peace River district, held its annual Co-ordinating Conference at the College in January, 1965.

During the late spring and early summer the College hosted High School students from Fort St. John, B.C., Dawson Creek, B.C., and Fairview. Forty-four fourth year Agricultural students from the University of Alberta visited the College in the fall.

Ninety 4-H members attended their Annual Camp at the College during the first week of July.

The following week forty-nine young people attended 'Teen Camp sponsored by F.U.C.D.A.

A Swine Production and Building School, Grazing Association Convention, Alberta Dairymen's Association Convention, Sheep Shearing School, Regional Seed Cleaning Plants Conference, and the Home and School Association Convention were some of the other activities that took place at the College during 1965.

The Honourable H. E. Strom, Honourable L. C. Halmrast, and Honourable Ira McLaughlin, Peace River country M.L.A.'s E. E. Lee, A. O. Fimrite, E. F. Montgomery and R. B. Ells, and several government officials attended a meeting in the College gymnasium in the late fall. Over 140 farmers were in attendance. The purpose of the meeting was to suggest methods of assisting Peace River farmers who had suffered crop losses during the past three years.

A special event enjoyed by students was the visit, on a College weekend in the fall, by Mr. and Mrs. Frank Dorward of Fort St. John, B.C. The Dorwards instructed students in dancing, especially square dances, rounds, and novelty dances.

Two Animal Science students had their expenses paid by the Peace River Livestock Co-op when they toured Canada Packers' Edmonton plant in March.

On June 26, the Alumni Association held a very successful Reunion Picnic at Dunvegan.

The Peace River Poultry Council held a chicken barbeque on the campus lawn on July 27, 1965.

Instructional and Administrative Staff Changes

Mr. R. S. Hamilton, Agricultural Mechanics instructor resigned. He was replaced by Mr. J. A. R. Palin, who transferred from Vermilion College.

Mr. E. E. Wilson was permanently appointed as Instructor in Agricultural Mechanics.

Mr. C. C. Williamson resigned as Accountant. Mr. R. E. Lloyd was appointed as Accountant in July, 1965.

Mr. R. W. Nelson joined the staff as Instructor in Soils and Plant Science in the early fall.

Mr. P. Farragher resigned as Dean of Men and Instructor of Community Organization. This position was filled in October by the appointment of Mr. J. S. Hladky.

Mr. E. A. Miller transferred to the Department of Labour. His position of Welding Instructor was filled by Mr. L. M. Wendelboe.

Miss D. M. Hoel was appointed Registrar in May, 1965.

Miss Ida Lanctot was appointed Stenographer on October 1, 1965.

Grounds

The summer of 1965 was very dry in Fairview. Almost two months elapsed without any rainfall, which was the opposite condition experienced the previous year. As a consequence, lawns on the College grounds had to be watered continuously.

Maintenance and Construction

The College Maintenance Staff constructed three new garages for staff houses located in the town of Fairview.

All three houses were painted and one was reshingled. New steps were provided, complete with metal railings.

The Maintenance program also included painting class-the main College building. The rotunda was extended, a large general office constructed, and other front offices were improved for more efficient use.

The College Maintenance Staff also remodelled the Hog Barn; stalls and floors were removed. New concrete stall divisions, floors, deep gutters and a pit for liquid waste were installed.

The Maintenance program also included painting classrooms and halls, increasing lighting in both areas. Heating and plumbing installations were replaced as needed. Additional cooking and refrigeration units were installed in the College kitchen.

Farm

The farm operation on the College attracted many visitors in 1965. Of particular interest has been the new Beef Feedlot. The shelter and feedlot is divided in two, with a rolling unit, central tube feeder and automatic waterer. Total capacity is forty head of feeders.

The remodelled Hog Barn also attracted many visitors. The deep gutters and pit for waste storage was one of the first installations of its type in Alberta.

The Sheep flock has also served to demonstrate various management techniques, such as rearing lambs on slatted floors. A demonstration of various feeding and management methods was commenced later in the year in order to show students and visitors the most efficient techniques.

Equipment purchased included a new milk cooler, used motor grader, baler and fertilizer spreader.

Crop Yields, 1965:

	Acreage	Yields
Oat silage	45	108 tons
Hay	120	64 tons

Livestock Inventory—December 31, 1965:

Kind	Breed	Number	Total
Beef Cattle	—Aberdeen Angus	37	.....
	Shorthorn	1	.....
	Feeders	39	77
Dairy Cattle	—Holsteins	14	14
Sheep	—Cross-breds	93	93
Swine	—Yorkshire	128	.....
	Lacombe	1	.....
	Landrace	1	130
Poultry	—White Leghorn (single comb)	257	257

Farm Sales, 1965:

Livestock	$14,334.46
Dairy Products	3,600.98
Poultry Products	1,319.42
Wool	398.28
Vegetables	1,448.84
TOTAL SALES	$21,101.98

Summary of Courses and Attendance, 1965:

	Winter Session	Spring Session	Fall Session
Agriculture	53	*N/O	70
Academics	30	34	28
Commercial	*N/O	*N/O	25
Motor Mechanics	15	11	9
Welding	7	5	9
Welding Short Course	11	*N/O	*N/O
TOTAL	116	50	141

*N/O—Not Offered.

Instructional and Administrative Staff, 1965:

M. Baranszky-Job, B.Sc., Horticulture
Mrs. W. Bartlett, Librarian
Miss W. D. Fiddes, Nurse, Assistant Dean of Women
D. A. Fleming, Recreational Director, Assistant Dean of Men
Miss M. A. Foster, Dietitian, Dean of Women
J. S. Hladky, B.Sc., P.Ag., Dean of Men, Community Organization
Miss D. M. Hoel, Registrar
M. H. Jaque, B.Sc., M.Ed., P.Ag., Principal
L. T. Jones, B.S.A., Animal Science
Mrs. B. L. Kuntz, Commercial
J. T. Lancaster, B.Sc., P.Ag., Prof. Certificate, Plant Science
Miss I. Lanctot, Stenographer
R. E. Lloyd, Accountant
H. E. McLachlan, B.Sc., Animal Science
R. W. Nelson, B.Sc., M.Sc., P.Ag., Soils, Plant Science
J. A. R. Palin, B.Sc., B.Ed., P.Ag., Prof. Cert., Agricultural Mechanics
H. E. G. Petersen, Motor Mechanics
J. P. Tait, B.Sc. (Agric.), Prof. Cert., Farm Management, Vocational Academics
J. H. Warne, B.Sc., B.Ed., P.Ag., Prof. Cert., Farm Management, Vocational Academics
E. E. Wilson, B.E., Agricultural Mechanics
L. M. Wendelboe, Welding.

Report of the Land and Forest Conservation and Utilization Committee and ARDA

G. R. STERLING, B.Sc., M.Sc., P.Ag., Provincial ARDA Director
J. L. KERNS, B.Sc., P.Ag., Chairman, Conservation & Utilization Committee
H. W. THIESSEN, B.Sc., M.Sc., Supervisor of Irrigated Pastures

During the year, Mr. J. L. Kerns was appointed as Chairman of the Conservation and Utilization Committee relieving Mr. Sterling of this responsibility.

Under the Conservation and Utilization Committee, the following work was completed:

Rannach:

Three quarter sections of land were purchased, two miles of cross fences were constructed, 400 acres of brush piles were burnt and repiled, 350 acres were cleared and seeded, 200 acres were tilled and seeded, and about 300 acres were sprayed for brush control.

Minburn Grazing Reserve:

Three miles of cross fences were constructed, and 500 acres were cleared and seeded.

Wanham Grazing Reserve:

Fair growing conditions resulted in good pasture recovery. An 800 acre clearing project was held up by deep snow in the winter of 1964-65 and was not completed by the end of the year.

Buck Mountain Grazing Reserve:

Seven miles of the east fence were completed which will allow an increase in cattle for pasturing in 1966, 300 acres were cleared and piled, corrals were rebuilt, and culverts installed in some pasture roads. Extremely wet weather all summer held up land development.

Whitemud Grazing Reserve:

The perimeter fence was completed on this pasture except on the south-west corner where a large swamp forms a natural cattle barrier. This pasture will accept local cattle on a permit basis in 1966.

Medicine Lake Grazing Reserve:

Ten quarter sections were purchased. About 2,000 acres were enclosed at the east side of Gosling Lake, but extremely wet weather hampered all development. Local cattle may be accepted on a permit basis in 1966.

Stony Plain Grazing Reserve:

A total of 55 quarters of land were purchased from the Municipal District and local farmers.

Westlock, Smoky Lake, Lac Ste. Anne, and Barrhead Grazing Reserves:

These pastures were consolidated as to size and area. Negotiations for land purchases were carried out.

Seven Persons Grazing Reserve:

No development was carried out on this reserve but a new area tentatively known as the Medicine Hat Pasture was added. This comprises four sections or more and will be fenced and improved as soon as possible. No new corrals will be needed as the original Seven Persons enclosure will be large enough to take care of the entire area.

Bow Island Grazing Reserve:

One-half section of land, and 663 acres of water rights were purchased and added to this pasture. Land surveys, levelling, and drainage works were initiated, and one-half mile of fence was completed.

Smoky Lake Grazing Reserve:

Sixteen miles of fence were built, one holding corral constructed, 95 acres were surveyed and levelled, 300 acres of stony land were seeded to grass and are to be irrigated. Approximately two miles of drainage channels, 1½ miles of irrigation distribution system, 52 irrigation and drainage structures, 3 dugouts, and two miles of fencing were done. A total of 130 acres were seeded to tame dry land grasses, 1,000 acres were irrigated and water rights were purchased on 485 acres.

Purple Springs Grazing Reserve:

Rocks were picked, land levelled and seeded to cover crops on approximately 100 acres. One-half mile of irrigation distribution system, 1 mile of fence, and 8 irrigation and drainage structures were built. Approximately 100 acres were irrigated, and 175 acres seeded to tame dry land grasses.

Pinhorn Grazing Reserve:

Approximately 60 miles of precise levels were surveyed preparatory to printing contour maps of the Milk River flats. Contours of 11 square miles of these flats were prepared. Irrigation feasibility studies of these flats were also commenced. Two dams were constructed with P.F.R.A. co-operation, and approximately 3 miles of road were rebuilt and gravelled with the co-operation of the Bow Island County No. 8.

Twin Rivers Grazing Reserve:

Perimeter fencing for 6¼ miles was surveyed and built, about 160 acres were levelled, and 11 dugouts and two dams were constructed.

Bow River Development:

One section of land was purchased for this development.

Note:-

The co-operation of the Colonization Branch, the Department of Lands and Forests Technical Division, and the P.F.R.A., was of great help to the Conservation and Utilization Committee in these Southern Alberta Irrigated Grazing Reserves.

Grazing Associations:

Grazing Associations received assistance in the form of interest free loans to implement improvements as indicated below:

Bunker Hill Grazing Association	$1,422.50	for fencing materials
Goodfare Grazing Association	2,450.00	for fencing materials
Little Smoky Grazing Association	575.00	for fencing materials
Simonette Grazing Association	367.00	for fencing materials

Demonstration Plots:

Plots on the farms of Messrs. Green and Wade, and Fox Brothers, were conducted during 1965. Yield tests were taken and recorded on each plot.

Land Assembly Project:

The following lands were purchased:

NE¼ 31-63-6-5 & S½ 32-63-6-5	$ 4,320.00
SW¼ 30-61-17-4, SE¼ 25-16-18-4 & Pt. E½ 24-16-18-4	12,425.00
N½ 34, SE¼ 34, Pt. SW¼ 35, all in 46-9-5, and Pt. SW¼ 2 and SE¼ 3, all in 47-9-5	5,450.00
W½ and SE¼ 26-34-7-5	18,000.00
NE¼ 2-56-3-4 (to be included in the Old Frontier Grazing Association)	1,350.00

Soil and Feed Testing Laboratory:

Mr. G. R. Sterling continued as a member of the Supervisory Committee of the Laboratory. Three meetings were held throughout the year. The following table shows the samples handled during the last six years:

1960	3,681
1961	3,794
1962	5,634
1963	8,484
1964	10,254
1965	10,073

Below is a table showing the different samples analyzed and the breakdown of the feed samples. Note that 1,620 feed samples were submitted, but that a total of 2,222 samples were analyzed. This is because more than one anlyses was done on some samples:

Samples Submitted

Quarter	Feed	Farm Soil	Garden Soil	Greenhouse Soil	Total for Quarter
January 1 - March 31	565	1,002	69	205	1,841
April 1 - June 30	101	807	184	295	1,387
July 1 - September 30	166	594	179	192	1,131
October 1 - December 31	788	4,681	51	194	5,714
TOTAL	1,620	7,084*	483	886	10,073

*In addition, there were 2,132 soil samples tested under the cooperative correlation program with the University and Research Stations.

Breakdown of Feed Samples

Quarter	Grains	Hays	Silages	Special Analyses*	Total for Quarter
January 1 - March 31	179	165	148	311	803
April 1 - June 30	41	46	9	24	120
July 1 - September 30	13	108	8	69	198
October 1 - December 31	252	330	119	400	1,101
TOTAL	485	649	284	804	2,222**

*Nitrate, Carotene, Prussic Acid.

**Many of the feed samples received both regular and special analysis, resulting in one sample being recorded in two places and accounting for the greater number of samples analyzed.

Reports and Recommendations Issued to Farmers

Number of Reports

Quarter	Feed	Farm Soil	Garden Soil	Greenhouse Soil	Total
January 1 - March 31	269	332	31	72	704
April 1 - June 30	48	271	117	56	492
July 1 - September 30	63	156	111	51	381
October 1 - December 31	374	1,308	43	48	1,773
TOTAL	754	2,067	302	227	3,350
Average number of samples per report	2.15	3.43	1.60	3.90	3.01

ARDA

The New Agreement covering the period April 1, 1965 to March 31, 1970, was signed between the Governments of Alberta and Canada. This new agreement gives more importance to Rural Development than the old agreement did.

Work progressed on the study involving Census Division 14, with the socio-economic study almost completed by the year end. A Regional Resource Co-ordinator and a Rural Development Home Economist were appointed for Census Division 14 in May. Census Division 12 was approved for a socio-economic study, which actually did not get underway by the end of the year.

ARDA Advisory Committee:

The ARDA Advisory Committee met a total of 9 times during the year. Following are the changes of personnel on this Committee:

Mr. D. I. Istvanffy, Department of Industry & Development, replaced Mr. W. G. Brese.

Mr. J. L. Kerns, Department of Agriculture, replaced Mr. W. A. Lobay.

ARDA Co-ordinating Committee:

The ARDA Co-ordinating Committee met four times throughout the year. The former Chairman of this Committee, Mr. R. M. Putnam, retired and was replaced by Dr. E. E. Ballantyne.

ARDA Projects Approved:

The following list shows the projects approved under each heading of the Agreement. *Indicates approved by Alberta only, and not approved by Federal ARDA.

Part I — Research

Woodlot, Watershed Survey

Economic Efficiency in Pasture Production and Improvement in Alberta

Pilot Study of Land Suitability for Wildlife

Soil Capability for Agriculture in Alberta, 1965-66

Forest Land Use Capability Classification—Renewal of 9031

An Inventory of Soil Capability for Forest Production—Renewal of 9030

Mapping Present Land Use in the Settled and Fringe Areas of Alberta

*Aerial Photography

Census Division 12, Comprehensive Inventory and Socio-Economic Analysis of Resources

Aquifer Engineering Research

*Watershed Research Study, Effect of Changing Land Use on Runoff

*Analysis of Alberta Hydrometric Data (River Research)

*Regima Studies of Alberta Rivers (River Research)

*Special Investigations on River Bed Evolution and Sediment Transport

An Assessment of Land Suitability for Recreational Use in a Pilot Area in the Vicinity of Edmonton

Groundwater Exploration and Aquifer Evaluation in the Alberta Plains

*The Potential Economic Benefits of the Highwood-Stimpson-Willow Creek Complex

*The Economic Benefits of the Central Alberta Water Control and Diversion

*Fishery Survey of Waters North of the 21st Baseline (Twps. 80 and 81) in the Province of Alberta

An Economic Analysis of a Selected Small Farm Area in the Peace River Area of Alberta.

Part II — Land Use and Farm Adjustment

Nil.

Part III — Rehabilitation

Nil.

Part IV — Rural Development Staff and Training Services

ARDA and Communications Course, Banff

Leadership Training for Rural and Community Development

*Alberta Rural Development and ARDA Staff

Training in Census Division 14, Edson Area.

Part V — Rural Development Areas

Nil.

Part VI — Special Rural Development Areas

Nil.

Part VII — Public Information Services

Nil.

Part VIII — Soil and Water Conservation

Irrigated Farm Development Studies, Investigations and Design

Beaver Creek Watershed Protection.

REPORT OF THE BOARD OF TRUSTEES OF THE SURPLUS WHEAT BOARD MONEY RECEIVED BY THE GOVERNMENT OF THE PROVINCE OF ALBERTA FROM THE 1916 - 1919 CANADIAN WHEAT BOARD

Honourable HARRY E. STROM, Minister of Agriculture, Chairman
Dr. E. E. BALLANTYNE, Deputy Minister of Agriculture, Member
Hugh M. Thompson, Olds, Alberta, Member
Minot L. Stetson, Edmonton, Alberta, Member
H. W. Gaebel, Secretary

By Order in Council, Dr. E. E. Ballantyne, Hugh M. Thompson and Minot L. Stetson were appointed members of the Board of Trustees to replace R. M. Putnam, former Deputy Minister of Agriculture, now retired, Richard Ballhorn of Wetaskiwin, who submitted his resignation and Arthur Pierson, deceased.

A Statement showing the Receipts and Expenditures is attached together with a statement of Assets and Liabilities.

During the year the net receipts were $3,854.69 as compared with $3,853.45 for the previous year.

Payments during the year under review amounted to $1,850.00, all of which was in payment of Bursaries and Scholarships awarded from the fund.

Meeting

A meeting of the Board of Trustees was held on May 21, 1965 and the schedule of Scholarships and Bursaries to be awarded for the ensuing year was approved totalling $3,850.00.

General

The Board has continued the policy of conserving the principle in the Trust Fund making all payments from income received on investments.

Investments

Total Investments at the end of the twelve-month period is as shown on the attached balance sheet.

TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND
Balance Sheet as at December 31, 1965
ASSETS

Current			
Bank Balance		$ 6,669.43	
Accrued Interest Receivable		733.21	$ 7,402.64
Investments	Par Value	Book Value	
Gov't. of Can. 3¾% Jan. 15/78	$ 2,500.00	$ 2,511.20	
Prov. of B.C. 3% Dec. 15/69	45,000.00	44,907.74	
Prov. of Sask. 5½% Feb. 15/82	5,000.00	4,969.75	
Ont. Hydro Elect. 4¼% Nov. 1/67	4,000.00	4,000.00	
Prov. of N.B. 3½% Apr. 1/67	45,000.00	44,980.22	
Prov. of Nfld. 3¾% June 1/76	4,000.00	3,946.80	
City of Calgary 3½% July 1/68	4,000.00	3,998.32	
	$109,500.00	$109,314.03	
Total Investments—Book Value			$109,314.03
Total Assets			$116,716.67

LIABILITIES

Trust Fund December 31, 1964	$114,658.39
Add: Surplus for 1965	2,058.28
Total Liabilities	$116,716.67

TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND

Accrued Interest Receivable as at December 31, 1965

Government of Canada Debentures			
$2,500, 3¾%, January 15, 1978, 5½ months			$ 42.96
Province of British Columbia Debentures			
$45,000, 3%, December 15, 1969, ½ month			56.25
Province of Saskatchewan Debentures			
$5,000, 5½%, February 15, 1967, 4½ months			103.13
Ontario Hydro Electric Debentures			
$4,000, 4¼%, November 1, 1967, 2 months			28.33
Province of New Brunswick Debentures			
$45,000, 3½%, April 1, 1967, 3 months			393.75
Province of Newfoundland Debentures			
$4,000, 3¾%, June 1, 1976, 1 month			12.50
City of Calgary Debentures			
$4,000, 3½%, July 1, 1968, 6 months			70.00
Bank Interest			
November, 1965	$64.19 @ 2%	$ 10.55	
December, 1965	59.94 @ 2%	10.18	20.73
Add: Accumulation of Discount			
Accrued on Province of B.C.		$ .96	
Accrued on Province of Saskatchewan		.78	
Accrued on Province of N.B.		3.31	
Accrued on Province of Nfld.		.80	
Accrued on City of Calgary		.26	
Less: Amount of Premium			
Accrued on Government of Canada		$ .55	5.56
Net Earnings accrued to December 31, 1965			$ 733.21

TREASURY DEPARTMENT
WHEAT BOARD MONIES TRUST FUND

Statement of Receipts and Payments for the Year Ended December 31, 1965

Bank Balance January 1, 1965			$ 4,664.74
Interest on	$ 2,500 Canada	$ 93.74	
Interest on	45,000 Province of B.C.	1,350.00	
Interest on	5,000 Province of Sask.	275.00	
Interest on	4,000 Ontario Hydro Electric	170.00	
Interest on	45,000 Province of N.B.	1,575.00	
Interest on	4,000 Province of Nfld.	150.00	
Interest on	4,000 City of Calgary	140.00	$ 3,854.69
	Bank Balance	100.95	
			$ 8,519.43
Deduct Payments:-			
Scholarships	—Fairview School	$ 400.00	
	—Olds School	1,100.00	
	—University of Alberta	150.00	
	—Vermilion School	200.00	$ 1,850.00
Bank Balance December 31, 1965			$ 6,669.43

Report on Farm Credit

ALBERTA FARM PURCHASE BOARD

K. G. TAYLOR, B.Sc., P.Ag., Chairman
H. ALLAM, P.Ag., Member
J. M. CURRIE, Member

Farm Purchase Credit Act

During the fiscal year April 1, 1964 to March 31, 1965, the Alberta Farm Purchase Board approved 248 applications, committing a total of $1,552,327.00 in Government loans.

There were 71 Advisory Committees operating at the end of 1965. The following is a list of the Counties, Municipal Districts and Improvement Districts which have formed Committees up to and including December 31, 1965, along with a listing of applications which have been handled by the Alberta Farm Purchase Board since its inception in 1957. The figure in brackets shows the number of applications submitted to the Board for the year 1965 only.

District	Applications submitted to Board	Approved	Rejected	Withdrawals	Hold for more Information	Value of Farm Lands	Government Loans to Board
Athabasca	57 (1)	38	12	7	......	$ 363,049.00	$ 177,450.00
Barrhead	78 (11)	52	24	2	......	699,200.00	326,250.00
Beaver	172 (2)	138	29	5	......	1,733,852.00	743,670.00
Bonnyville	105 (10)	89	13	3	......	837,089.75	442,325.00
Camrose	182 (6)	150	26	6	......	2,020,565.00	952,510.00
Cardston	73 (2)	52	19	2	......	702,925.90	306,052.95
Eagle	87 (5)	67	17	3	......	468,900.00	221,650.00
Flagstaff	105 (8)	90	11	4	......	1,074,725.00	512,535.00
Foothills	41 (......)	32	8	1	......	554,308.00	240,400.00
Forty Mile	66 (8)	55	10	1	......	717,388.27	327,936.63
Grande Prairie	65 (3)	48	14	3	......	508,800.00	234,050.00
Kneehill	1 (......)	1	......	......	......	24,000.00	10,000.00
Lacombe	8 (......)	7	1	......	......	78,050.00	37,775.00
Lac Ste Anne	28 (......)	15	11	2	......	136,200.00	64,074.50
Lamont	166 (12)	134	24	8	......	1,362,600.00	627,050.00
Leduc	144 (13)	130	11	3	......	1,498,575.00	723,987.50
Lethbridge	85 (5)	52	31	2	......	920,420.00	423,745.00
Minburn	115 (7)	82	26	7	......	806,078.65	399,147.50
Mountain View	68 (5)	41	25	2	......	648,220.00	298,750.00
Newell	12 (......)	8	4	......	......	101,400.00	45,860.00
Paintearth	141 (15)	130	7	4	......	1,152,991.00	594,351.00
Peace	3 (......)	2	1	......	......	29,000.00	14,500.00
Pincher Creek	14 (......)	10	4	......	......	196,442.00	90,750.00
Ponoka	123 (7)	87	26	10	......	1,147,050.00	541,395.00
Provost	1 (......)	......	1	......	......	......	......
Red Deer	5 (4)	4	2	......	......	95,000.00	39,000.00
Rocky View	83 (7)	71	11	1	......	1,103,737.95	496,197.95
Smoky Lake	...... (......)	......	......	......	......	......	......
Smoky River	58 (7)	44	13	1	......	422,380.00	183,940.00
Spirit River	...... (......)	......	......	......	......	......	......
Starland	54 (1)	47	7	......	......	561,972.00	272,195.00
Stettler	34 (5)	26	7	1	......	371,854.20	171,250.00
Stony Plain	26 (4)	18	7	1	......	238,500.00	110,050.00
St. Paul	65 (11)	48	16	1	......	470,615.00	226,255.00
Strathcona	19 (1)	16	2	......	......	203,250.00	91,325.00

District	Applications submitted to Board	Approved	Rejected	Withdrawals	Hold for more Information	Value of Farm Lands	Government Loans to Board
Sturgeon River	56 (6)	35	15	6	......	524,970.00	241,675.00
Thorhild	81 (2)	60	18	3	......	539,460.00	251,850.00
Vermilion River	72 (3)	65	6	1	......	736,792.00	363,096.00
Vulcan	100 (8)	86	11	3	......	1,208,705.00	538,612.50
Wainwright	42 (3)	31	8	3	......	369,200.00	179,350.00
Warner	37 (......)	26	8	3	......	435,369.50	191,344.75
Westlock	228 (21)	170	55	3	......	1,906,516.00	898,550.00
Wetaskiwin	62 (7)	44	16	2	......	597,800.00	268,150.00
Wheatland	23 (1)	20	3	......	......	312,250.00	142,200.00
Willow Creek	87 (8)	59	24	4	......	956,846.00	440,474.50
Special Area #2	101 (8)	90	8	3	......	903,910.00	440,273.00
Special Area #3	69 (8)	63	6	......	......	752,360.00	368,530.00
I.D. # 11	59 (5)	36	20	3	......	616,995.20	239,230.00
I.D. # 22	5 (2)	2	2	1	......	22,400.00	11,200.00
I.D. # 42	...... (......)	......	......	......	......	......	......
I.D. # 58	5 (......)	2	3	......	......	29,000.00	14,500.00
I.D. # 65	74 (6)	45	26	3	......	549,620.00	246,800.00
I.D. # 77	2 (1)	2	......	......	......	22,700.00	11,000.00
I.D. # 78	13 (1)	7	6	......	......	25,250.00	11,575.00
I.D. # 95	6 (......)	2	4	......	......	17,000.00	8,500.00
I.D. #101	15 (2)	9	6	......	......	58,000.00	27,350.00
I.D. #102	57 (2)	27	27	3	......	145,700.00	68,980.00
I.D. #107	5 (......)	4	1	......	......	21,700.00	10,590.00
I.D. #108	3 (......)	2	......	1	......	15,500.00	7,750.00
I.D. #109	3 (......)	3	......	......	......	25,500.00	12,750.00
I.D. #111	...... (......)	......	......	......	......	......	......
I.D. #124	6 (......)	4	2	......	......	27,350.00	13,675.00
I.D. #125	16 (......)	10	6	......	......	79,500.00	34,550.00
I.D. #126	9 (1)	6	3	......	......	48,500.00	24,250.00
I.D. #131	5 (......)	3	2	......	......	26,000.00	13,000.00
I.D. #132	20 (3)	10	9	1	......	88,500.00	44,250.00
I.D. #134	13 (1)	10	2	1	......	58,000.00	27,000.00
I.D. #138	20 (1)	10	10	......	......	93,215.00	42,236.00
I.D. #139	4 (......)	2	1	1	......	17,250.00	8,625.00
I.D. #146	4 (1)	1	3	......	......	6,000.00	3,000.00
I.D. #147	1 (......)	1	......	......	......	4,900.00	2,450.00
TOTALS—71	3,587(261)	2,731	731	125	......	$32,491,897.42	$15,153,794.78

Of the 2,731 applications approved, 210 applications have been approved in 1965, with $1,334,858.50 committed in loans for the twelve month period.

Purchase Boards have been formed in all areas of the Province with the exception of the Municipal Districts of : Taber, Acadia Valley and Fairview.

The Alberta Farm Purchase Board held 24 meetings during the year, and have met a total of 208 times since the Act was passed in 1957.

Farm Home Improvement Act

The Farm Home Improvement Act was passed in 1959. During 1965 a total of 19 loans were made with a total value of $36,522.00.

A total of 283 loans valued at $462,916.00 have been made under this Act since inception.

Report of the Farm Economics Branch

1965

G. R. PURNELL, B.Sc., M.Sc., Ph.D., P.Ag.—Director

Farm Management Extension Section:

A. R. Jones, B.Sc., P.Ag., Supervisor
L. Bauer, B.Sc., M.Sc., P.Ag., Assistant Supervisor
M. A. Cameron, B.Sc., P.Ag., Regional Economist, Lethbridge
B. A. Hackett, B.Sc., Agricultural Economist

Production Research Section:

B. J. McBain, B.Sc., P.Ag., Supervisor
K. D. Porter, B.Comm., P.Ag., Assistant Supervisor
G. B. Parlby, B.Sc., Resource Development Economist
R. J. Miller, B.Sc., P.Ag., Agricultural Economist

Marketing Section:

G. R. Keay, B.Sc., P.Ag., Assistant Supervisor
C. H. Ferries, B.Sc., M.Sc., P.Ag., Special Consultant and Secretary to Marketing Council

Statistics Section:

R. E. English, B.S.A., M.S.A., Agricultural Statistician

Rural Development Section:

V. T. Janssen, B.Sc., P.Ag., Supervisor
K. A. Svenson, B.A., Assistant Supervisor.

A. GENERAL

Demand for assistance from this Branch expanded rapidly in 1965. The need for increased economic efficiency by farmers and ranchers continued to stress the importance of economic information and advice on the use of good business practices in operating farm production units in Alberta. The elements of farm record keeping, economic analysis, partial budgeting for future operation, buying, selling, farm business agreements and estate planning were all promoted by the Branch in conjunction with the District Agriculturists, District Home Economists and Commodity Branch Supervisors and Specialists. Mass media, group meetings and individual consultations were all utilized for this purpose.

The Department Administration drew heavily upon Economics for advice and information relative to policy and program decisions in government. Marketing of Agricultural Products legislation, irrigation policy, ARDA, and emergency assistance for farms suffering crop failure all required considerable time and resources.

Other Government Departments such as Lands and Forests, Industry and Development, Municipal Affairs and Northern Development Council all received some direct consultations from this Branch, and of course these and many others reciprocated.

Considerable time and assistance vis-a-vis co-ordination of various phases of our program was spent with Farm Credit Corporation, Veterans Land Administration, Federal Departments of Agriculture and Labour, and the University of Alberta.

Turnover of personnel was heavy in 1965. C. H. Ferries, Supervisor of the Marketing Section, was seconded to be Secretary of the Agricultural Products Marketing Council; B. H. Friesen, Regional Economist, Calgary, and W. G. Kuhtz, Assistant Statistician, resigned. Additional staff included B. A. Hackett, Agricultural Economist, and K. A. Svenson, Assistant Supervisor of Rural Development. Recruitment continued to be difficult.

A brief outline of the work of the five operating sections of the Branch is presented below.

B. FARM MANAGEMENT EXTENSION SECTION

Economic forces have a very significant impact on the standard of living reached by our farmers. These economic forces are both cause and effect. They are tide, backwater and undertow. They entrench some farm families in secure positions and grind others into relative poverty. Alert, progressive farmers and educators are anxious to understand these forces so that they can become better equipped to cope with them. It is the function of this section to help meet the increasing demand for economic information which will help a farmer run his farm business more successfully.

The business records of approximately 400 of the leading commercial farmers in this province form the primary source of our raw data. Physical and financial information was collected, analyzed, interpreted and the findings made known. In addition, the technical information released by departments in government and business was also studied and interpreted on a dollar and cents basis to determine which techniques had some profit generating potential if adopted by commercial farmers. Those that did offer some promise of satisfying this criterion were then brought to the farmers' attention at short courses, special meetings and through the mass media.

Farm Business Clubs:

The number of formal Farm Business Associations expanded from seven to ten. Barrhead-Westlock-Mayerthorpe, M.D. of Smoky River (C.A.R.D.A.), Stettler-Coronation-Sedgewick-Vermilion-Wainwright, set up farm business groups in 1965. This increased the number of farmers on formal analysis by 40 percent (287 to 410). Ten reports (nine in English and one in French) were issued and 9,000 copies mimeographed and distributed through the Extension Service. The findings were given wide publicity through the press and radio stations from releases made by this section. The reports also formed the foundation material for many of the accounting clubs and farm and home management clubs which are operating throughout the province.

Participants in the program received more than the report. The Farm Management Specialist and the District Agriculturist worked out joint recommendations for the business of each participant and these were written up in the farmer's individual report together with the partial budgets as required. Finally, the District Agriculturist and the farmer worked out the changes which could be implemented, given the resource restrictions of the latter. Whenever unusual problems developed and whenever the District Agriculturists and the farmers were interested in learning more about the applications of the business analysis, the Farm Management Specialists made individual contacts. In all other situations group meetings were used to discuss the farm businesses on an area basis.

Computer Programming of the Farm Business Analysis:

The rapid growth in the number of requests for an analysis of the farm business necessitated the development of a computer program to handle the individual records. The design and testing was completed during the year and, barring any unforeseen circumstances, all records will be processed electronically in 1966. Group totals by type of farm and by soil type will be done on the computer. Averages will be done manually until the program is revised.

Revision of the Data Form for Farm Business Analysis:

The original data form for the farm business analysis was designed to reveal the strengths and weaknesses of the farm business. Farmers found that they needed more physical and financial detail for decision making. The analysis was revised during the year so that it would supply the information required on labor and other physical input and output items.

Estate Planning:

Recognition of the need to build up the size of the farm business and the release of adequate farm credit to facilitate farm enlargement plus the potential impact of income and estate taxes led to a strong demand for information on estate planning, partnerships and incorporation. District Agriculturists and their advisory committees requested the farm management staff to collect and present information on estate planning and business arrangements at 35 special meetings at the main centres throughout the province. Additionally, over 100 individuals received direct assistance in one or more aspects of estate planning. In response to the consistent demand eight news releases and radio tapes were prepared on insurance, gift-giving arrangements, wills, estate taxation and father-son partner-management. Similar material is being presented on the television program "This Business of Farming 1966".

Publications and Mimeographed Material:

In response to requests by subject matter specialists and District Agriculturists, and for presentation at short courses, subject matter meetings and field tours, the following material was researched and prepared:

1. Alberta's Farm Business Clubs
2. The Economics of Farm Machinery Decision Making
3. The Economics of Upright, Horizontal and Trench Silos
4. The Economics of the Cow-Calf Operation
5. The Economics of the Cattle Feeding Enterprise.

Material on Partnerships in Farming and the Economics of the Swine Enterprise was prepared but not distributed at the close of the year.

In-Service Training School in Farm and Home Management:

Until the late 50's and early 60's our farm population did not expect Extension workers to give them much more than the latest technical recommendations. Now an increasing number expect subject matter specialists and generalists to be reasonably adept at reasoning out the economic implications of their suggestions. However, Extension personnel are not expected to initiate and sustain a major farm and home program in their respective areas until they are competent to do so. The need for formal training was recognized.

The Extension and Farm Economics Branches conducted an In-Service Training School on Farm and Home Management in the third week of September for all the District Home Economists, 30 District Agriculturists and 10 Subject Matter Specialists. The material prepared for both the lecture and laboratory sessions was also made available to those who were unable to attend the School.

Regional Offices:

In response to pressure from farm operators for more specialized help in agricultural economics, two Regional Offices were located at Calgary and Lethbridge in the fall of 1964. These were in full operation for the year 1965.

Regional Offices have permitted more detailed assistance on individual problems of farmers and District Agriculturists than was previously possible. In addition there was a good demand for these men as speakers at short courses and producer meetings. Extension personnel and key personnel from other departments of government made rather extensive use of the specialist's knowledge in determining area economic problems, in deriving budgets data for crops, livestock, land levelling, community pastures and for irrigation policy development.

Statistical Summary Farm Management Section:

Farm Management Meetings	156
Farm Business Reports Issued	10
Subject Matter Publications	9
Radio and TV Presentations	21
News Releases	20
Consultations	442

C. PRODUCTION RESEARCH SECTION

During the past year the Production Research Section carried out a number of major economic studies in the fields of Milk Production, Vegetable Production and Irrigation. The four continuing Cost of Milk Production Studies were supplemented by a study on Milk Price Control. The Vegetable Studies which were carried out the past several years were used as part of the basis for a province-wide Feasibility Study begun this year. This year saw the groundwork laid to undertake a series of new studies for the Water Resources and Colonization Branches by initiating, at the request of the Irrigation Policy Committee, a study entitled "An Analysis of Administrative Structure of Irrigation Districts". The first report of the Land Levelling Study was issued in 1965. This study is being carried out to determine the relative value of flood irrigation on levelled land as opposed to flood irrigation on unlevelled land and their economic relationship to sprinkler irrigation.

Milk Studies:

1965 saw the completion of the 26th year for the four continuing Cost of Milk Production Studies for Edmonton, Calgary, Lethbridge and Medicine Hat, but the results have been withheld from publication at the request of the Milk Control Board pending presentation of the data obtained at the Milk Price Hearings to be held throughout the Province early in 1966. B. J. McBain, as a special Agricultural Adviser to the Milk Control Board, has been asked to make the presentation and interpretation of the Cost Study Data as evidence to evaluate trends in milk costs.

The long duration of these continuing studies prompted a request for a paper to be presented by the Supervisor on some of the findings of the studies to the Annual Conference of the Agricultural Institute of Canada which was held in Vancouver. This paper was entitled "Economic Changes in Alberta Fluid Milk Production 1939-1964", and covered the changes in Milk Production per Cow, Labour Use, Feed Consumption, Use of Capital, Cost of Production and Milk Prices. The latter is illustrated in Graph I.

In 1965 the supervisor also attended the International Meeting of Milk Control Administrators which was held for the first time in Canada. The Deputy Minister, as guest speaker, made reference to the use of data from the Alberta Milk Studies in Milk Control Policy for the Province.

Another highlight of the year was the completion and publication of a study entitled "The Control of Fluid Milk Prices in Western Canada 1935 to 1963" by G. B. Parlby.

Vegetable Studies:

A third year interim report was prepared and published on Fresh Vegetable Production in Southern Alberta. The final three-year summary report has been prepared and awaits printing.

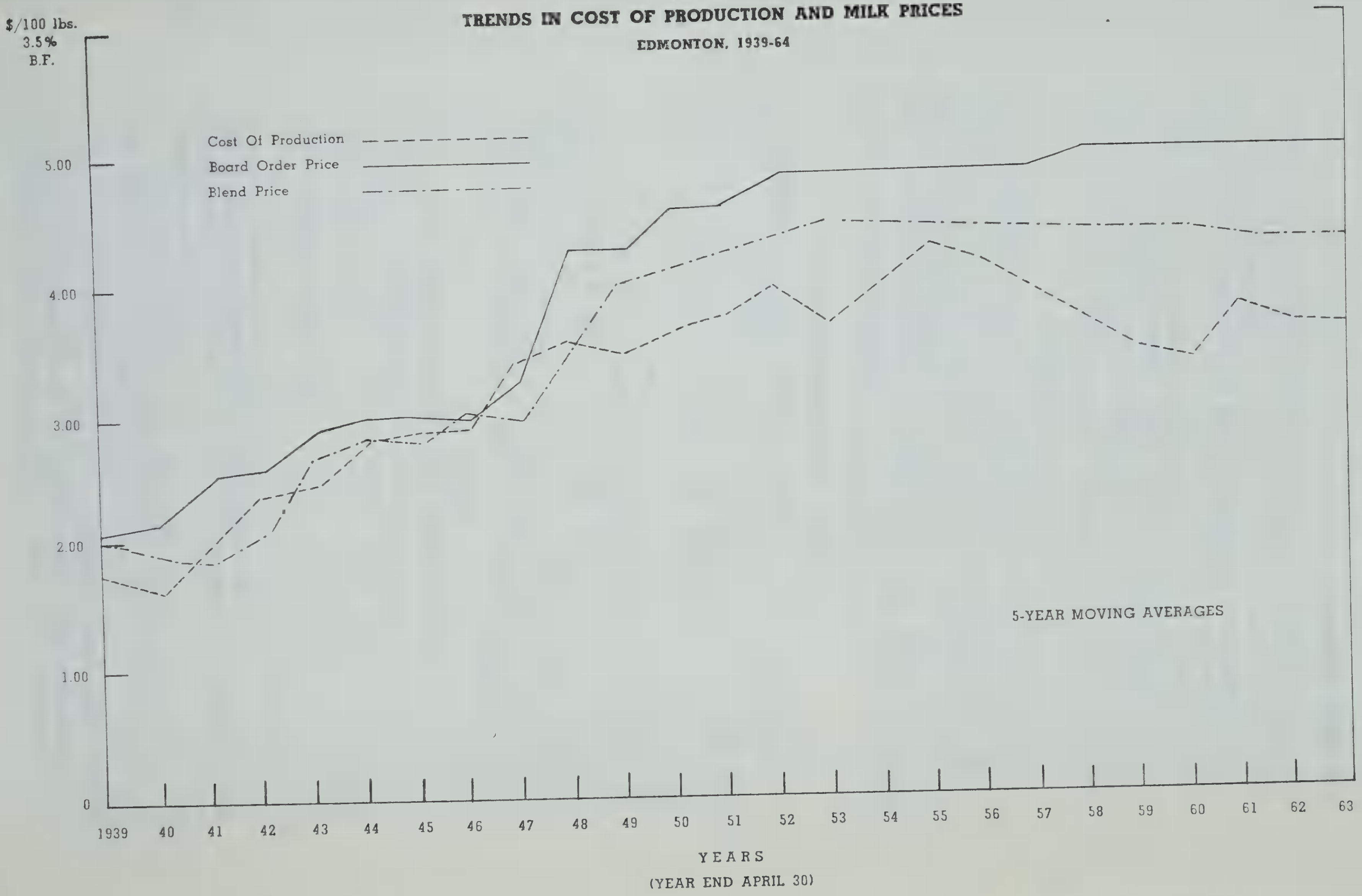
The data of the 1964 Canning Peas Study was compiled and published by March 1965 to comply with a special request of the Canners and Growers to have the information in time to be used in price negotiations.

A feasibility study to determine the economic feasibility of a Fresh Vegetable Industry in Alberta was requested by the Department of Industry and Development and was later agreed upon by Farm Economics Branch, Department of Industry and Development and the Field Crops Branch that it be carried out as a joint effort. Communications were established with Universities and Vegetable Industries in the Western States, and Mr. Porter as Project Manager, and Mr. Huene of the Department of Industry and Development, spent the month of August interviewing these people with a view to securing information which would be useful in assessing the Alberta situation. A complete report was made of the information secured in the United States, and a full-fledged study will begin in 1966.

GRAPH I

TRENDS IN COST OF PRODUCTION AND MILK PRICES

EDMONTON, 1939-64



Irrigation Studies:

An Analysis of the Administrative Structure of Irrigation Districts was initiated this year at the request of the Irrigation Policy Committee. Concern has been expressed by water users and policy-making groups about the kind of administrative structure required for irrigation projects. At present there are 14 irrigation projects with their administrations looking after over half a million acres of irrigable land. These administrations vary in historical inception and promotion, area, rates charged, services rendered and financial independence. To provide information for future irrigation policy-making, the framework of this study was designed to make a case study of each district.

1965 marked the completion of the second year of the Land Levelling Study. The duration of the study has been extended to three years because the above normal rainfall in the irrigation districts hampered evaluating the responses from irrigation. An interim report was issued for the 1964 findings and the analysis of the 65 records in the 1965 study are nearing completion. As this is the first study of its type, the following tables are included to indicate the method of analysis used.

TABLE I—WATER USAGE

	Levelled Fields				Unlevelled Fields				Sprinkled Fields			
	1964		1965		1964		1965		1964		1965	
	A	B	A	B	A	B	A	B	A	B	A	B
Sugar Beets	2.9	13.5	2.3	12.5	3.0	22.4	1.8	16.3	3.2	13.0	1.8	8.8
Grain Crops	1.5	11.3	1.0	9.2	1.3	11.0	1.0	9.8	1.8	7.2	1.0	4.4
Forage Crops	2.3	14.0	1.7	12.2	2.4	18.5	1.5	12.9	3.0	12.0	1.2	6.4

A—Average Nuber of Irrigations per Season.

B—Average Number of Acre-Inches per Acre.

The above table illustrates the amount of water used for the two years of study and indicates the type of growing season experienced, 1964 being a typical year and 1965 wetter than average. The 1965 data, as in 1964, includes only the fields which were irrigated; other fields on study which were not irrigated (in the grain and forage crop grouping) are not included in the tabulations.

TABLE II

CROP PRODUCTION—YIELD PER ACRE

		Levelled Fields		Unlevelled Fields		Sprinkled Fields	
		1964	1965	1964	1965	1964	1965
Sugar Beets	(tons)	14.1	15.3	10.6	10.9	14.4	13.4
Alfalfa	(tons)	4.0	3.9	3.4	3.0	3.5	3.1
Barley	(bus.)	66.9	54.7	47.6	44.0	56.8	......
Flax	(bus.)	31.9	18.6	22.0	16.7	22.0	19.2

The yield data indicates that yields were generally lower in 1965 than in 1964 (at least for the grain and hay crops). The wet weather upset irrigation schedules and this combined with a variety of other conditions resulted in somewhat lower yields. The 1965 figures, as in 1964, are for irrigated fields only, although little difference in yields existed between irrigated and non-irrigated hay and grain crops in 1965.

Reports Published in 1965:

"Edmonton Dairy Farm Business Summary"—B. J. McBain
"Calgary Dairy Farm Business Summary"—B. J. McBain

"Economic Changes in Fluid Milk Production 1939-1964"—B. J. McBain

"Control of Fluid Milk Prices in Western Canada 1932-1963"—G. B. Parlby

"Production Economics of Peas"—K. D. Porter and B. J. McBain

"Economics of Production and Marketing of Irrigated Fresh Vegetables in Alberta"—K. D. Porter

"Economics of Land Levelling"—R. J. Miller and B. J. McBain.

D. MARKETING SECTION

The Marketing Section continued to provide the Agricultural Industry in Alberta with counsel and assistance in connection with the marketing of their products. It should be kept in mind that marketing refers to the many activities that are required in the movement of products from farm to consumer.

The following are the major activities with which the Marketing Section was concerned over the past year.

Agricultural Marketing Course:

A short course in marketing was presented for farmers in the County of Sturgeon. This was a 12-hour course extending over a period of four weeks. The main subject areas were as follows: what were the marketing problems, methods of analyzing marketing problems, factors affecting prices, marketing of livestock and market power. Attendance averaged 21 persons at each meeting. The short course was culminated with a tour of a produce wholesale house, a poultry processing plant and a super-market.

Poultry Study:

Analysis was made of records that had been collected from commercial egg producers throughout the Province over a three year period. This was a study of carefully selected poultry farms that began in the fall of 1961 in co-operation with the Poultry Branch. The main objective of the study was to investigate costs of different methods of marketing eggs in conjunction with costs of producing eggs for flocks of various sizes. Preparation of a final report for release early in the new year was near completion.

Seed Cleaning Plant Study:

The Alberta Co-operative Seed Cleaning Plant Business Analysis was completed for the fiscal year ended June 30, 1964. Of the 50 plants operating at that time, 48 submitted financial statements which were analyzed and a report of the analysis published.

The average cost of cleaning seed was 6.6 cents per bushel and ranged from a low of 4 cents to a high of over 10 cents per bushel. Since the average total receipts were 5.8 cents per bushel, a loss of 0.8 cents per bushel or $2,097 per plant was incurred. However, the profit made on treating seed was more than the loss from cleaning seed. In addition there was a profit made on miscellaneous goods and service leaving the plants with an average final profit of $2,264.

Labor efficiency measured in bushels of seed cleaned per hour of labor was found to be the most important variable affecting the cost of cleaning seed. Other variables which had a significant effect on the cost of cleaning seed were depreciation, annual volume, variable costs and manager's salary.

The plants were encouraged to set aside a depreciation reserve which could be used to replace worn out or obsolete equipment and to rebuild the plant when necessary. They were also encouraged to lengthen the cleaning season through the use of a rate schedule which would permit larger discounts for grain cleaned early in the winter or during other slack periods.

Marketing Act Study Committee:

The supervisor continued to act as Chairman of a five-man committee that studied the Alberta Marketing of Agricultural Products Act for the purpose of recommending any changes necessary to facilitate the intent of the Act. He assisted with the drafting of amendments that were subsequently incorporated ino the Act.

Miscellaneous Activities:

The Marketing Section continued co-operation with the Statistics Section in preparing material for the Alberta Farm Economist. This is a quarterly publication dealing with marketing and outlook information. Details may be found in the report of the Statistics Section.

Section personnel participated in the programs of District Agriculturists at Lloydminster, Calgary and Fairview. Talks in regard to specific aspects of marketing were given to the following groups: Banff Leadership Conference, Western Canada Produce Association, Alberta Swine Council, Edmonton Chamber of Commerce Agricultural Short Course, and various Poultry Councils throughout the Province.

The supervisor attended a Vegetable Growers' Association meeting in Winnipeg to learn details of the Manitoba Potato Marketing Commission. He also met with officials of the Manitoba Hog Marketing Commission.

Information and counsel were provided numerous visitors to the office, i.e. farmers, government personnel, businessmen and news media reporters.

E. STATISTICS SECTION

The principal functions of the Statistics Section during 1965 were: to serve as liaison between the Alberta Department of Agriculture and the Dominion Bureau of Statistics; to make available statistics of agriculture as may be required by Department personnel and the public; to conduct the Alberta crop reporting service; to be responsible for the Alberta Farm Economist; and to perform other services as required.

The Supervisor of the Section attended the Federal-Provincial Conference on Agricultural Statistics held at Ottawa on February 16 and 17. The continuing series of statistics which are gathered and made available under co-operative arrangement between the Federal and Provincial governments were reviewed. Representatives of ARDA, the Canada Department of Agriculture, the Agricultural Economics Research Council, and the Economic Council of Canada outlined the need for statistics in their respective fields. Unresolved problems in connection with the 1961 census of agriculture were discussed and tentative plans for evaluating the 1966 census were outlined. Recommendations included a suggestion "that an enumerative sample survey of farm expenses and off-farm income be undertaken before the 1971 census", and that "recognizing the need for data, to more fully reflect the continuing economic and social changes in the agricultural sector and other rural parts of the country, it is recommended that continuing study be given to planning surveys in addition to or associated with the Census of Agriculture".

In past years crop reports were issued bi-weekly during the growing season. In 1965, however, press reports on crop conditions were added on alternate weeks. The summaries of crop conditions telegraphed to Ottawa for inclusion in Dominion Bureau of Statistics crop reports were continued. The work of the crop correspondents whose co-operation made the service possible is hereby acknowledged.

District Agriculturists again co-operated in the conduct of the June 1 Cattle on Feed Survey undertaken by the Dominion Bureau of Statistics.

Under agreement with the Dominion Bureau of Statistics, the 1964 questionnaires pertaining to the acreage, production and value of commercial vegetables and potatoes were made returnable to the Statistics Section for compilation. The advantages of having the estimates prepared in the Province justified continuing the agreement into 1965 and on a permanent basis.

The Statistics Section was responsible for the Alberta Farm Economist for most of 1965. The contents of the four issues released were as follows:

Winter:
The Production of Principal Crops in Alberta.
Hog Market Prospects. Cattle. Price Supports.

Spring:
Highlights. Planting Intentions 1965. Cattle. Hogs. Eggs.

Summer:
Highlights. Cattle. Dairy Farm Business Study.

Fall:
Highlights. The Price of Potatoes. The Hog Situations.
Economics of Fertilizer Use.

A statistical supplement to this report will be prepared as soon as preliminary 1965 estimates of agriculture for Alberta become available.

F. RURAL DEVELOPMENT SECTION

The responsibilities of the Rural Development Section include the following:

1. Conduct research in connection with the Rural Development Program in Alberta.
2. Collaborate closely with the Extension Branch in the planning and execution of the Rural Development Program.
3. Indicate trends in resource use and potentials for development for use by all levels of government in the formation of policy.

The primary function of the Rural Development Section in 1965 was to compile an inventory of the human and physical resources of Census Division 14 and to analyze the resources in a framework of economic, social and cultural development. This was a continuation of the project initiated in 1964. A similar study was undertaken during the year in Census Division 12 where the activity to date has been confined to the compilation of preliminary data.

The objective of the study was to assimilate the known information about the area for use by local study groups and by government agencies, in accordance with the basic philosophy of Rural Development which is to help people help themselves. In this regard local study groups in the area will be established to investigate their problems as defined by themselves and to suggest solutions based on information supplied and on the results of self-surveys conducted in the area. In developing the program the Rural Development Section has worked closely with the Regional Resource Co-ordinator and the Rural Development Home Economist, both of whom were employed by the Extension Branch and were stationed in Edson. They were instrumental in forming a local technical panel representing most of the government agencies in the area. Two meetings were held with the Technical Panel at which members of the Rural Development Section were represented.

Preparatory to the formation of local groups to study the information provided from the inventory and to examine their own situation, it was necessary to divide the census division into areas which were small enough to allow maximum participation and yet large enough to have sufficient resources with which to work. It was also necessary to have areas in which the people had common interests and problems. The criteria used to delineate these socio-economic areas were the distances and direction people travelled to trade and to services. The use of these criteria resulted in the division of Census Division 14 into five areas having their centres at Hinton, Edson, Whitecourt, Mayerthorpe and Evansburg-Wildwood.

In each of the areas the recognized community opinion leaders were selected by the reputational approach and exposed to the philosophy of Rural Development. Subsequently many of these leaders discussed the program with local people with the view of identifying problems and establishing study groups to investigate the problems.

By the end of the year, study groups had not progressed to the stage where the Rural Development Section could actually participate in the localized activities. This will be a continuous responsibility of this Section in the future.

Members of the staff also participated in the following:

1. Visit to Iowa State University, Ames, Iowa, and the southern part of the State to become acquainted with the Rural Development program in Iowa.
2. Meeting of Rural Development officials from Ottawa and Western Canada in Saskatoon to discuss methods and procedures.
3. Attended a workshop on Community Development at Banff.
4. Assisted with the formation of an ad-hoc interdepartmental committee on Recreation.
5. Participated in numerous interdepartmental discussions on matters related to Rural Development.
6. Addressed the annual conference of Land Inspectors, Department of Lands and Forests.
7. Participated in six seminars on Rural Development in Census Division 14.
8. Addressed two meetings of the Technical Panel at Edson.
9. Investigation of sociological factors involved in the transfer of an Extension office from one district to another.
10. Provided consultant services regarding socio-economic problems of the Prairie Farm Rehabilitation Administration in Southern Alberta.
11. Replied to several enquiries regarding establishment of business in Census Division 14.

Report of the Agricultural Products Marketing Council

D. H. McCALLUM, B.S.A., P.Ag., Chairman
C. H. FERRIES, B.S.A., M.S., P.Ag., Secretary
R. H. McMILLAN, B.S.A., Member
K. WILLIAMS, Member
L. P. BROMHAM, Member

The Alberta Marketing of Agricultural Products Act (1955) was amended to a considerable extent at the 1965 session of the Legislature. While the intent and purpose of the Act remained unchanged, that is, to provide for the promotion, control and regulation, in any or all aspects of the marketing of certain designated agricultural products; the Act was broadened in order to provide greater scope and guidance to the various commodity groups that wished to avail themselves of the Act. Whereas provision had previously been made for the establishment of only producer marketing boards, amendments to the Act provided for marketing commissions, an Agricultural Products Marketing Council, as well as for Industry Advisory Committees. A brief description of these follow.

Producer marketing boards are the legally constituted means for collective bargaining. The powers that may be extended to a board range from those of negotiation of producer prices and terms of contract, to complete control of the product and selling it through a designated agency with or without the use of marketing quotas. A plan for a marketing board cannot be implemented until it has received the support of 51 per cent of the producers entitled to express their opinion. Marketing boards are composed of producers and elected by producers.

Marketing commissions may be established solely for the promotion, advertising and conducting of research for a commodity; or commissions may be set up to provide for an agency through which producers may sell their product on a voluntary basis. Marketing quotas are not permissible. If there is no strong opposition toward a plan for a marketing commission it may be implemented without a vote. Marketing commissions consist of producers and industry representatives who are appointed by the Lieutenant Governor in Council.

The Agricultural Products Marketing Council was established July 1, 1965 for the purpose of administering the Alberta Marketing of Agricultural Products Act. It is the function of the Marketing Council to receive and analyze requests from groups of producers seeking to establish a marketing plan; to aid in the development of plans and regulations with producers; to hold hearings and conduct plebiscites if necessary; to supervise the operation of producer boards and marketing commissions; and to advise the Minister of Agriculture on all matters relating to the establishment, operation and control of boards and commissions. The composition of the five man Marketing Council was designed to bring together persons with a wide range of knowledge and experience. Three are civil servants, while one other member was appointed to represent producers, and one to represent industry.

The Marketing Council may from time to time establish Industry Advisory Committees to advise it with respect to the production, marketing and promotion of any regulated product. The composition of such a committee would consist of persons directly associated with the agricultural industry.

In Alberta, at the present time, there is one producer board of the price negotiating type for processed vegetables that was established in 1958 under the 1955 Marketing of Agricultural Products Act. Council have met with this Board to discuss steps that are necessary to amend their plan in order to make it compatible with the present legislation.

A plan for a producer board for broiler chicken, of the price negotiating type and using marketing quotas, has been presented to the Minister of Agriculture for consideration by Cabinet. This was the culmination of numerous meetings with the executive of the Alberta Broiler Growers' Association, and careful study by the Marketing Council prior to forwarding their recommendations to the Minister.

The Council has also held a series of meetings with the executive of the Alberta Potato Growers' Association in regard to a proposed plan for a potato marketing commission. This is a type of commission that would advertise, promote and conduct research on Alberta potatoes and potato products.

Other groups with whom the Marketing Council have held meetings to advise as to establishment of boards and/or commissions have been for the following products: hogs, eggs, turkey and honey.

A great deal of interest has been shown in the Marketing Act since it was amended. The Marketing Council have communicated through various news media, meetings, and correspondence in regard to how the Act might be interpreted and used.

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